

MAINE STATE LEGISLATURE

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PUBLIC DOCUMENTS OF MAINE:

BEING THE

ANNUAL REPORTS

OF THE VARIOUS

DEPARTMENTS  INSTITUTIONS

FOR THE YEAR

1901

VOLUME IV.

AUGUSTA
KENNEBEC JOURNAL PRINT
1901

ANNUAL REPORT
OF THE
UNIVERSITY OF MAINE

FOR THE YEAR 1900

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
KENNEBEC JOURNAL PRINT
1901

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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 thirty-second annual report with the report of the President and Treasurer.

The report of President Harris, as usual, is thorough and complete in its consideration of the affairs of the University.

There has been but one change in the Board of Trustees during the year. The term of Mr. A. L. Moore expired in August and Hon. A. J. Durgin was appointed his successor. Mr. Moore graduated from the University in 1879, was appointed trustee in 1886 and served faithfully in that capacity fourteen years. He had the honor to succeed his father, Hon. Luther Moore of Limerick, who was trustee of the institution seven years. Mr. Durgin is a resident of Orono, where the University is located, and has for years been a staunch friend of the institution. He has worked to promote its interests as a member of the legislature and in other positions, and will undoubtedly render it excellent service as trustee.

The many changes in the faculty are referred to in the report of President Harris. The new members of this body are men of unquestioned ability. The University lost a most able and conscientious member of the faculty by the death of Prof. Francis L. Harvey. He served the institution with fidelity and success for fourteen years, holding ever the esteem, respect and love of his associates.

The work of improving the campus has been continued. About \$3,000.00 has been expended in repairing and extending the heating plant, and further expenditures will have to be made for new boilers in the immediate future. It is hoped that a central heating plant, sufficient to heat all the main buildings in a satisfactory and economical manner, will soon be possible.

Necessary expenditures have been made to increase the equipment of different departments, the largest item being about \$2,400.00 for the Department of Electrical Engineering.

The buildings are generally in good condition. Repairs have been made wherever necessary. An Observatory building has been erected for the Department of Astronomy. The construction of a drill hall and gymnasium building was begun in the early part of the year, the corner stone being laid by Governor Powers on June 12th. This building, now

nearly completed, is constructed of brick and stone, with steel trusses and slate roof; and in addition to its value as a drill hall and gymnasium will meet important wants of the University, one of which is safe and commodious chapel accommodations. It will cost about \$28,000. The funds for its construction are being provided through the efforts of President Harris, from subscriptions secured by him from the alumni and other friends of the University.

Nearly all of the larger University buildings are constructed of brick, or brick and stone, the principal exception being the shop building. This building is of wood, standing upon posts. It was poorly constructed originally and is now badly out of repair. It is inadequate for the uses of the University. A large part of the students are pursuing the courses in Mechanical and Electrical Engineering; and the practical instruction in these courses is given in this building, the poorest one on the campus. It is too small, cannot be repaired except at large expense; and, if in complete repair, would not now meet the needs of the engineering departments that use it. It was built when the students were about one-third of the present number and has been in constant use many years. Its valuable equipments should have the protection of a stone or brick building. A new building is needed, of sufficient size to furnish room necessary for the requirements of these important departments. It should contain recitation rooms, drawing rooms, carpenter and iron working rooms, a forge shop, foundry, and rooms for dynamos, boilers and engines. It would seem to be wise policy on the part of the state to furnish as promptly as possible all buildings necessary for carrying on advantageously the instruction work of the institution. The last legislative appropriation for a new building was made ten years ago. The trustees would urge upon the next legislature the great need of a new shop building, and ask that an appropriation be made for the construction of such a building. If the financial condition of the State does not seem to warrant an appropriation of a sum sufficient to complete such a building in every part at once, provision might be made for the beginning of a plain, substantial brick structure, that would protect the equipments and accommodate the students, to be finished in future years.

The School of Law is winning golden opinions from every quarter because of the ability of its instructors and the quality of its work.

The many friends of this institution have every reason to be extremely gratified because of its constant growth and progress and its present excellent condition. Its development has been steady and healthy in all directions. As compared with a decade ago, it has more and better buildings with greatly improved equipments, three times as many students, a faculty twice as large and of acknowledged ability. The courses of instruction have been increased in number, and the general work broadened. New departments have been successfully established and the institution has much greater financial resources. Its friends have multiplied continually; and in all respects the University of Maine is apparently prosperous and successful.

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 present my eighth annual report as president of the University of Maine, covering the calendar year 1900.

CHANGES IN THE BOARD OF TRUSTEES AND THE FACULTY.

Mr. Arthur Lee Moore, B. S., whose term of office as a trustee expired in 1900, did not ask reappointment, as private interests made it inconvenient for him to serve. He was a faithful and interested member of the Board for fourteen years. His successor, the Hon. A. J. Durgin, is a resident of Orono, who has been familiar with the University throughout its entire history. When a member of the legislatures of 1893 and 1897 he bore a large part in important legislation relating to the University, and was the sponsor of the bill to give the institution its present name.

One of the saddest events in the history of the University is the death of Prof. F. L. Harvey. During the Christmas recess of 1899 he was called to Iowa by the death of his mother. In order to reach Orono before the end of the vacation he made the journey in great haste, depriving himself of needed rest. On his return he was so worn out, that he was relieved from recitations with the expectation that he would be restored in a few days; but he grew worse and it became necessary to provide for his work for the remainder of the year. Fortunately the instruction work as then arranged in the Department of Natural History was much lighter during the spring term than in the fall. The classes were assumed voluntarily by Prof. Munson, Mr. Stover, and Dr. Russell, and the investigations for the experiment station were discontinued. The President wishes to acknowledge the generous action of the three instructors just named. The immediate cause of Prof. Harvey's sickness seems an insufficient one, and it is probable that he had been failing in mental vigor for some time, and in a conscientious attempt to maintain his work, had increased his hours of labor beyond the safety point, so that a small additional strain precipitated a collapse. Improvement failed to come, and it was soon evident that the mind, once so acute and accurate, was no longer clear. During his last weeks progress was rapid toward the end, when, in an instant, and under the most pathetic conditions, life went out.

Prof. Harvey was a man of broad education. At an early age he received the degree of B. S. from the Iowa Agricultural College, where he had won unusual distinction as a student and had rendered some service as an instructor. He was for many years a member of the faculty of the University of Arkansas. While there his vacations were spent very largely in explorations and collecting trips, which yielded the material for numerous scientific papers that made him well known as a careful, conscientious and brilliant student in the field of botany, and more especially in that of entomology. He came to Orono as professor of natural history in 1886 and at once took an important place in the scientific life of the institution.

Prof. Harvey was an accurate scholar, of retentive memory, and unusual power of stating his knowledge in an interesting way. His devotion to his work was complete. As an investigator he was patient, trustworthy, and prolific. Scientific journals show many products of his work. The list of published papers which he was accustomed to include in his biennial reports was always an important one. His experiment station work has been ranked very high by those best qualified to judge. As an instructor he was enthusiastic and sympathetic, and succeeded in interesting many in his department, and in arousing the deepest interest in a few. He always had one or two students in his laboratory devoting themselves especially to the subjects which he taught. As a man he was eminently friendly, sincere, and transparent.

Mr. Perley Walker, B. M. E., for three years instructor in mechanical engineering, has withdrawn to pursue graduate study at Cornell University in naval architecture. He was a successful teacher, and his loss is much regretted.

Allen Rogers, B. S., served very acceptably as instructor in Chemistry for the year of Prof. Aubert's absence.

William Emanuel Walz, LL. B., instructor in law, has been advanced to be Professor of Law.

Gilman Arthur Drew, Ph. D., has been appointed Professor of Biology to succeed Prof. Harvey. The title has been changed, from Professor of Natural History and Entomologist to the Experiment Station, to Professor of Biology and Zoologist to the Experiment Station. Prof. Drew was born in Iowa in 1863; received the degree of B. S. from the University of Iowa in 1890 and that of Ph. D. from Johns Hopkins University in 1898. After leaving college, he was teacher of science in an academy and in a high school in Iowa. At Johns Hopkins University he held successively, a scholarship, a fellowship, and the Bruce Fellowship, and for the last two years was assistant in zoology. His summers have been spent in collecting and investigating among the mountains and along the coast of California; in the West Indies and Bahama Islands; at Cold Spring Harbor, N. Y.; at Beaufort, S. C.; at Woods Hole, Mass.; and at Harpswell, Me. Prof. Drew has published a number of important papers embodying the results of his studies.

Orlando Faulkland Lewis, Ph. D., has been appointed Assistant Professor of Modern Languages, beginning with September, 1900. He was

born in 1873, was fitted for college in the Boston Latin School, and in Germany with private tutors. He received the degree of B. A. from Tufts College in 1895 with the highest honors of his class. For two years he was assistant in modern languages in his alma mater. He obtained the degree of M. A. from the same college in 1897. The following year was spent in the University of Munich and the last two in the University of Pennsylvania, where he held a Harrison Fellowship in Germanics. He was granted the degree of Ph. D. in 1900. Dr. Lewis has studied and traveled extensively throughout Europe. In addition to other publications he has issued a text-book for the use of German classes.

Louis Siff, B. S., a graduate of Cornell University, and a fellow in the University of Nebraska, has been appointed Tutor in Mathematics, in place of Mr. Crathorne, who has become instructor in the University of Wisconsin.

Roscoe M. Packard, M. A., who has pursued undergraduate and graduate courses at Western Reserve University, has been appointed Tutor in Mathematics.

William P. Beck, B. S., a graduate of Dennison University, has been appointed Tutor in Physics in place of Herbert G. Dorsey, resigned.

Clinton Llewellyn Cole, B. C. E., a graduate of the University in the class of 1900, has been appointed Tutor in Drawing in the place of Harold H. Clark, resigned.

Mr. Edwin C. Upton, Assistant in Modern Languages, has been promoted to be Tutor in English and Modern Languages.

Mr. Alden B. Owen, B. M. E., class of 1900, has been appointed Tutor in Electrical Engineering.

Miss Geneva R. Hamilton, who received a certificate on completion of the course in library economy, in 1895, has been appointed Assistant Librarian.

The following graduates of the University in the class of 1900 have been appointed assistants as indicated:

Charles H. Lombard, B. C. E., Assistant in Civil Engineering.

Frank H. Mitchell, B. S., Assistant in Chemistry.

James Arthur Hayes, B. S., Assistant in Chemistry.

Wilfred H. Caswell, B. M. E., Assistant in Physics.

Philip R. Goodwin, B. C. E., Assistant in Civil Engineering.

Percy L. Ricker, B. S., Assistant in Biology.

Clifford D. Holley, B. S., Assistant Chemist in the Experiment Station.

Perley Spaulding, B. S., a graduate of the University of Vermont in the class of 1900, has been appointed Assistant in Horticulture in the Experiment Station.

FACULTY.

The list of faculty and other officers for the college year ending June, 1900, includes 55 names; of these 6 were lecturers in the school of law, and gave only a small part of their time to the University; 10 others were employed for all or a part of their time in the work of the Experiment Station. While the list of faculty names is long, it is still true that there are many departments in which additional instructors could be

appointed with advantage to the work, and there are some in which an increase of the force is almost imperative. The list of institutions in which the members of the faculty have received the preparation for their work indicates the breadth and cosmopolitan character of the body, including not only American but foreign universities. The list includes: Amherst College; Baldwin University; University of Berlin; Boston University; Bowdoin College; University of Chicago; Cornell University; Dennison University; Harvard University; University of Heidelberg; University of Iowa; Johns Hopkins University; University of Leipsic; University of Maine; Massachusetts Agricultural College; Massachusetts Institute of Technology; University of Michigan; Michigan Agricultural College; University of Munich; University of Nebraska; Northwestern College; University of Rochester; Syracuse University; Tufts College; Wesleyan University; Western Reserve University; University of Wisconsin; Yale University.

It is worth while noting the important increase in the number of the faculty in recent years. The list has grown since 1893 from 25 to 55, or, omitting the faculty of the School of Law, to 46. The number of officers bearing the title of professor in the collegiate departments has increased from 13 to 24. This is due to some extent to the introduction of new subjects, but more largely to the division of subjects and the strengthening of old lines of work. It has resulted in confining the duties of many officers to a narrower range, allowing greater specialization, and better results in teaching. In many departments the division of work is extremely satisfactory. It is believed, for instance, that the agricultural department is so organized as to allow its instructors to devote themselves to special lines of thought and investigation with a completeness possible in very few American institutions.

The increase in the faculty has been made possible, partly by the appropriations of the State, but not largely, for the State money has been used almost entirely for maintenance expenses, for repairs, improvements to buildings, and additions to equipment. The most important sources from which we have drawn the support of this development have been the increase of eight thousand dollars a year in the national appropriations, and more important, a large increase in the funds received from students. While a very considerable sum of money has been invested in the last eight years in the improvement and extension of our buildings, it has been the policy to limit this expenditure to necessities, and to appropriate liberally for the employment of teachers and the purchase of apparatus. Buildings greatly add to the comfort of an institution, and have their proper part in its efficiency, but they are much less important than teachers and apparatus. While the University is sorely pressed for room it takes great satisfaction in the efficiency of its board of instruction and the completeness of the department facilities.

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:

William Henry Crowell, New Britain, Ct.
George Pearson Larrabee, Pride's Corner.
DeForest Reed Taft, Winchester, N. H.

The first degree was conferred upon the following persons:

Lewis Appleton Barker, LL. B., Bangor.
Harry Woodward Beedle, B. M. E. (in Electricity), South Gardiner.
Alan Lawrence Bird, B. M. E. (in Electricity), Rockland.
Frank Harvey Bowerman, B. C. E., Victor, N. Y.
William Joseph Burgess, B. M. E., Calais.
Agnes Rowena Burnham, B. Ph., Old Town.
Walter Neal Cargill, B. M. E. (in Electricity), Liberty.
Wilfred Harold Caswell, B. M. E. (in Electricity), Bridgton.
Wilkie Collins Clark, B. S., Skowhegan.
James Edward Closson, B. S. (in Chemistry), Monson, Mass.
Clinton Llewellyn Cole, B. C. E., Pleasantdale.
Harold Elijah Cook, LL.B., Vassalboro.
Harry Ashton Davis, B. M. E., Orono.
John Frederick Dolan, LL.B., Bangor.
Henry Frank Drummond, B. M. E. (in Electricity), Bangor.
Julian Sturdevant Dunn, B. M. E. (in Electricity), Cumberland.
Herbert Davidson Eaton, B. S. (in Preparatory Medicine), Bangor.
Paul Frank Foss, LL.B., Weston.
Hiram Gerrish, LL. B., Brownville.
Bernard Gibbs, LL.B., Glenburn.
Philip Ross Goodwin, B. C. E., Randolph.
Claude Dewing Graton, LL.B., Burlington, Vt.
Charles Perley Gray, B. S. (in Preparatory Medicine), Old Town.
George Otis Hamlin, B. M. E., Orono.
Malcolm Cole Hart, B. C. E., Willimantic.
Howard Andrew Hatch, B. C. E., Lindenville, O.
James Arthur Hayes, B. S. (in Chemistry), Randolph.
Guy Alfred Hersey, B. C. E., Bangor.
Ernest Emery Hobson, LL. B., Palmer, Mass.
Clifford Dyer Holley, B. S. (in Chemistry), Farmington.
Leon Herbert Horner, B. S., Springfield, Mass.
Edward Hutchings, LL. B., Brewer.
Freeland Jones, LL. B., Bangor.
William Goldsborough Jones, B. S., Bucksport.
Thomas Francis Judge, B. M. E. (in Electricity), Biddeford.
Harry Hewes Leathers, B. M. E., Bangor.
Charles Hutchinson Lombard, B. C. E., Portland.
Alexander Love, B. C. E., East Bluehill.

Verdi Ludgate, LL. B., Lubec.
John Gardner Lurvey, B. M. E. (in Electricity), Portland.
Matthew McCarthy, LL. B., Bangor.
Frank McDonald, B. M. E. (in Electricity), Portland.
John Daniel Mackay, LL. B., Lake Ainslie, Cape Breton.
Howard Lewis Maddocks, B. C. E., Skowhegan.
Edwin Jonathan Mann, B. M. E., West Paris.
Wilbur Louis Merrill, B. M. E. (in Electricity), East Parsonsfield.
Chester Horace Mills, LL. B., Skowhegan.
Fred Carleton Mitchell, B. S., West Newfield.
Frank Henry Mitchell, B. S. (in Chemistry), Charleston.
George Ferguson Murphy, B. C. E., Alewife.
Frank Albert Noyes, B. M. E. (in Electricity), Berlin, N. H.
Alden Bradford Owen, B. M. E. (in Electricity), West Pembroke.
Arthur Southwick Page, B. C. E., Fairfield.
DeForest Henry Perkins, B. Ph., North Brooksville.
Harold John Phillips, LL. B., Skowhegan.
Daniel Lara Philoon, B. S. (in Chemistry), Auburn.
Howard Pierce, LL. B., Blaine.
Charles Omer Porter, B. C. E., Cumberland Mills.
Arthur Wellington Price, LL. B., North Waldoboro.
Percy Leroy Ricker, B. S. (in Preparatory Medicine), Westbrook.
Charles Alphonso Robbinson, B. Ph., Patten.
Agnes May Robinon, LL. B., Sherman Station.
Clarence Herbert Rollins, B. M. E. (in Electricity), Veazie.
Frank Morris Rollins, B. S. (in Chemistry), Waterville.
Leo Bernard Russell, B. C. E., Farmington.
Walter Joseph Sargent, LL. B., Brewer.
Lewis Harry Schwartz, LL. B., Lawrence, Mass.
Stanley Sidsensparker, B. S., Warren.
Frank Jackson Small, LL. B., Old Town.
Clinton Leander Small, B. A., Auburn.
Edward Henry Smith, B. M. E., East Sullivan.
Freeman Ames Smith, B. S., Thorndike, Mass.
Adah Snowdeal, B. A., Augusta.
James Bissett Stevenson, LL. B., Farmington.
Grosvenor Wilson Stickney, B. M. E., Clinton, Mass.
Edward Moore Strange, B. C. E., Calais.
Howard Clinton Strout, B. M. E. (in Electricity), Orono.
Edwin Morrel Tate, B. C. E., South Corinth.
Fred Foy Tate, B. C. E., South Corinth.
Dana Leo Theriault, LL. B., Caribou.
Frederick Everett Thompson, LL. B., Bangor.
Fred Hale Vose, B. M. E. (in Electricity), Milltown, N. B.
William Henry Waterhouse, LL. B., Old Town.
Frank Elijah Webster, B. M. E., Patten.
Benjamin Thomas Weston, B. C. E., Madison.
Wallace Augustus Weston, B. C. E., Madison.

Joseph Onon Whitcomb, B. Ph., Morrill.

Dana Scott Williams, LL. B., Lewiston.

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:

William Cross Holden, M. E., Lynn, Mass.

Allen Rogers, M. S., Orono.

Perley Walker, M. E., North Anson.

STUDENTS.

The number of students for the year ending June, 1900, was 365, and for the year beginning September, 1900, will be somewhat larger. The Freshman class just admitted, numbers at the time of writing 109. It represents country districts and cities in the usual proportion, and includes students from every county of the State except Franklin, and from several other states. It is noteworthy that it contains graduates of an unusually large number of preparatory schools.

A large majority of these students have gained admission by certificate, and their work for about half of the fall term shows that a satisfactory proportion of the whole number have been well prepared. The grade of work demanded from our classes has been raised from year to year, and the preparatory schools are maintaining fairly well the advance in preparation which we have needed. Improvement is especially noticeable in many of the smaller high schools.

The certificate system is giving good results; experience has shown some defects, but we are correcting them as fast as they become evident. It has been difficult to make candidates understand, and in some cases, to make schools understand, that the subjects prescribed for entrance examinations are not to be regarded a complete course of study, but are prescribed either because they are essential, as the foundation for the pursuit of the same or closely related subjects in college courses, or because they are convenient subjects on which to test the efficiency of the whole preparatory course; or for both reasons. This misunderstanding arises with candidates for the scientific and engineering courses. The preparatory work for the classical course is made up largely of a few subjects, most of which must of necessity run through several years. It is therefore easy to test the candidate's whole work by a comparatively short examination. On the other hand, courses which prepare for technical and scientific college courses include a much larger number of studies, many of which vary from school to school, and the examination, unless unduly long, can test only a comparatively small part of the whole preparatory work. As a result, a candidate by giving his whole attention to the subjects assigned for examination, may succeed, under favorable conditions, in passing a college examination, for admission to a scientific or technical course, with a preparation, one or even two years shorter than that demanded by the classical course. The saving of time is, however, at the cost of development. The candidate, if admitted, may maintain himself, but he will suffer the disadvantage of a poor prepara-

tion, and runs the risk of fixing the habit of poor work, or at least, less than his best. This is all the more true because the minimum demands made by technical and scientific courses upon the student, after admission, are more rigorous than those made upon the classical student. The candidate for admission to a four years' course in the University needs a full four years' course of preparation in the high school.

During the present year there has been added to the regulations governing the use of certificates one forbidding the admission by certificate of non-graduates of any school, except in unusual cases, in which the circumstances must be stated, and the candidate expressly recommended for admission, by the principal of the school in which he prepared.

During the year, the University has begun, in a systematic way, the visitation of approved schools. It has always been the purpose of the University to make such visits, but the purpose has not been fully carried out.

The proper committees of the faculty have now under consideration the classification of approved schools into groups so as to make clear for which course in college each school prepares, and which school courses furnish a satisfactory preparation.

The ideal relation between the public high schools and the University would make every four years' high school course a preparation for at least one college course. In planning our entrance requirements and our courses of study the University has kept this in mind as an ideal. It is believed that this end can be accomplished without disadvantage to the high school students who discontinue their course before entering college. The condition for admission to college is this:—the successful completion of a four years' high school course, in which shall be included certain studies, varying according to the college course contemplated. Our scientific course prescribes the smallest list, namely,—English; one other language, pursued for at least one year; two natural sciences; algebra and plane geometry. Surely, these studies ought to be a part of the training of every high school graduate, and as they take less than one-third of the time allotted to a full high school course, they leave ample opportunity for other studies which teachers or pupils may think necessary.

COURSES OF STUDY.

Since my last report no new courses of study have been added to those already in existence, but some important modifications and improvements have been made. The University offers instruction in the following courses:

- 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 Courses 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.
 - The Short Course in Pharmacy.
- School of Law.

During the year the course in Spanish has been developed. For a number of years, courses in Spanish and Italian have been offered on alternate years as elective studies for students in the classical, Latin-scientific, and scientific courses. Recent events have greatly increased the importance of Spanish, especially for students in engineering courses. The faculty have, therefore, increased the opportunity for the election of Spanish, and it is hoped that it may be possible soon to put instruction in this language on the same plane with French and German.

French and German elective courses for Juniors and Seniors have been opened to students in the engineering courses. The work in the department of biology has been materially extended. The course in chemistry is enriched by the introduction of industrial chemistry.

Under the efficient guidance of Prof. Huddilston, there has been organized an Art Guild, having as its objects the study of art and the collection of photographs and casts of the masterpieces of the great artists. This effort has met with remarkable success, and there is reason to believe that it will prove an important influence in the University.

SCHOOL OF LAW.

The school of law has passed the experimental stage and has proved itself competent to do thoroughly good work. Its graduates have maintained its reputation in their examinations at the Bar, and the faculty are establishing an enviable reputation among other schools. Two of the professors have received offers of positions in other states, but have preferred to remain with us. Without establishing excessive requirements, the school has made no concessions from its original determination to do the best work on the highest grade. The faculty of the school now consists of

- Abram Winegardner Harris, LL. D., President of the University,
- George Enos Gardner, M. A., Dean and Professor of Law,
- Allen Ellington Rogers, M. A., Professor of Constitutional Law,
- William Emanuel Walz, M. A., LL. B., Professor of Law,
- Arthur Wellington Price, B. A., LL. B., Instructor in 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 Medical Jurisprudence,
 Forest John Martin, LL. B., Lecturer on Common Law Pleading and
 Maine Practice,

Hugo Clark, C. E., Lecturer on Equity Pleading,

Ralph Kneeland Jones, B. S., Librarian.

For the year ending in June the number of students was forty-two. For the current year the number is slightly decreased by the change of the course from two years to three.

EQUIPMENT.

The annual expenditure for departmental equipment, exclusive of books, is always a very considerable sum. During the last year this item was larger than usual. The heating plant has been repaired at an expense of about \$3,000. We have a satisfactory system for carrying steam from the light station to four large buildings, Oak Hall, Wingate Hall, Coburn Hall, and the new drill hall. We are, however, without a central heating plant, and the steam is taken from the boiler connected with the lighting plant, which is not of sufficient capacity. The equipment for the course in electrical engineering has been increased by an expenditure of \$2,398.42. This was made necessary by the increased number of students entering this course. Still further large expenditures will be needed. The department of astronomy has been equipped with an eight-inch telescope made by Alvan Clark & Sons.

The department of biology has expended nearly one thousand dollars for microscopes, and other apparatus. The department of veterinary science has expended about five hundred dollars for the same purpose.

LIBRARY.

The library now contains 19,650 volumes. Perhaps no part of our equipment is so insufficient. With the increasing amount of investigation carried on, the improvement in methods of instruction, and the growth in the number of students, the demands upon the library have increased much more rapidly than the means for satisfying them. It is to be hoped that in the near future we may be able to make a material increase in the annual appropriation for the purchase of books.

BUILDINGS.

The University buildings are in good condition. Repairs have been made during the year, when needed, but owing to the fact that repairs have been well maintained the expenditure for this purpose was slightly less than usual.

The Dairy building has been repaired at an expenditure of about five hundred dollars. For the use of the department of astronomy a frame observatory building has been constructed, containing a dome, twelve feet in diameter, for the large telescope, and an adjoining room for the azimuth and altitude instrument.

The most important addition to the buildings is the erection of a drill hall. This is a building which the University has greatly needed for many years, and the recent shortening of the winter vacation and lengthening of the summer vacation, a change which was forced upon us by the interest of the student body, has practically cut off the time which in this climate was available for out door drill. As military drill is required by both national government and state, some provision for indoor drill was imperative.

No less important was the need of a gymnasium. The combined influence of the climate and the class demands upon the student's time lead a very large number to a neglect of proper exercise during the winter months. The need of a drill hall and gymnasium was several times presented to the legislature, but without success. The last legislature referred it to the coming legislature. The need of such a building was so great and the chance of obtaining it from the legislature so little, that, with the approval of your board, I appealed to the alumni and other friends of the University for funds with which to build it. It is probable that on the completion of the building we shall have in hand about one-half the total cost. The remainder will come slowly and with some difficulty, but I am confident that it will not be necessary to ask the State for an appropriation to complete this building.

It was originally designed to cost not more than \$20,000, but changes in the original plans have increased this sum. These changes include the substitution of brick for wood in parts of the building, the substitution of granite for brick in other parts, the raising of the basement story of the whole building about three feet; improvements in the room to be used as a chapel; the substitution of slate roofing for shingles, and of steel trusses for wood in the drill room; the finishing of the whole basement instead of a part only. The building contains a gymnasium and drill room 60x106; a general assembly room 38x114; recitation rooms; offices; store rooms; rooms for the athletic teams; bathrooms; bowling alley; ball cage; etc.; and will furnish unexcelled facilities for military drill and physical training.

NEEDS OF THE UNIVERSITY.

The needs of an institution of this kind are always numerous, and I regard it as unnecessary to mention any except the most prominent and most pressing. The heating plant must be extended. I do not see how this work can be postponed. The boilers now in use in one building, the greenhouse, may not last out the present winter, and cannot be used another winter. Two buildings, Oak Hall and Fernald Hall, are now entirely dependent for heat upon the boiler in the light station, and the new drill hall will have no other source of heat. This boiler is not large enough to meet the demand, and as it is the only one, any breakdown would leave us without the means of heating these buildings. The overloading of this boiler is especially dangerous as we depend upon it, not only for heat, but for power in the shop, and both water and light for the whole university. It is imperative that a second boiler be purchased

and set up. It is, however, to be hoped that when this is done, it may be possible to begin the construction of a new shop building and power and heat plant. As these must be in a new location, and cannot be long delayed, it would be extremely unfortunate to expend any more money on the present location.

Another pressing demand is for improved methods of ventilation, in the recitation rooms in Coburn Hall, and in Fernald Hall. For the work that we do, our buildings are few and small and recitation rooms and laboratories must be used for the maximum number of persons and the maximum number of hours. This can be done safely when ventilation is satisfactory, but knowing as we do how serious to health is the menace of bad ventilation, I am sure that if the present conditions could be appreciated the State would not hesitate to make the provision to remedy our present difficulties.

One most important need is a new shop building to include offices, recitation rooms, drawing rooms, and stock rooms, a foundry, forge shop, carpenter shop, iron working room, repair room, dynamo room, engine room, boiler room, and coal storage. The utility and necessity of such a building need no proof. The insufficiency of the present building is evident on inspection. It is an old building; it is a frame building; its foundations are posts; it is cold and full of drafts; it is unplastered and unfinished; it has been built piecemeal, with no possible regard to architectural effect, because it was absolutely necessary to obtain the largest space for the smallest expenditure; it is liable to fire; it is too small; it must have expensive repairs if it is to be used much longer. In this building is placed valuable machinery, which has cost the State a large sum of money. The erection of a new building would accomplish important economies in the production of heat, light and power, in the item of repairs, in the maintenance of the plant, and in the efficiency of instruction. It need not be expensive. A large part would be of heavy but simple construction, one story in height, with large glass surface. Unless the conditions of the State treasury absolutely prohibit any such appropriation, every effort should be made to obtain an appropriation for such a building or for a part of it.

A satisfactory building with central heating plant and equipment could be built for \$50,000.

Respectfully submitted,

A. W. HARRIS, *President.*

REPORT OF THE TREASURER

To the Trustees of the University of Maine:

The Treasurer has the honor to submit the following report concerning the financial condition of the University, June 30, 1900.

RECEIPTS OF THE UNIVERSITY FROM JULY 1, 1899, TO JUNE 30, 1900.

Cash balance July 1, 1899		\$12,760 04
Land Grant Fund	\$5,915 00	
Coburn Fund	4,000 00	
Morrill Fund	25,000 00	
The State	30,000 00	
Rents	1,162 22	
Bills Receivable	700 24	
Interest	344 36	
Library Fines	22 34	
Shop	265 57	
Diplomas	218 24	
Prizes	20 00	
Personal Collections (A. & L.)	175 07	
Commons (old bills)	507 11	
Suspense	12 00	
Error Account	197 88	
Athletic Association	149 73	
School of Law	2,400 00	
Sundry Small Receipts	182 66	
Tuition	8,458 14	
Student Receipts	8,463 76	88,194 32
		\$100,954 36

NET EXPENSES OF THE UNIVERSITY FROM JULY 1, 1899, TO JUNE 30, 1900.

CURRENT EXPENSES:		
Salaries		\$43,127 49
Departments:		
Agriculture	\$1,465 02	
Physics	579 67	
Chemistry	103 08	
Natural History	26 35	
Civil Engineering	430 53	
Electrical Engineering	2,422 04	
Mechanical Engineering	196 74	
Modern Languages	11 65	
Mathematics and Astronomy	9 05	
Military Science	1 50	
School of Law	1,314 51	
Library	3,736 32	
Latin	127 30	
Reading Room	109 01	
Greek	4 09	10,536 86
		\$53,664 35

NET EXPENSES OF THE UNIVERSITY—CONCLUDED.

GENERAL EXPENSES:		
Advertising	\$414 89	
Care of grounds	485 72	
Improvement of grounds	651 94	
Office	396 04	
Commencement	450 16	
Miscellaneous	1,408 00	
Postage and Stationery	438 17	
Furniture and Fixtures	522 64	
Water	2,971 15	
Oak Hall	218 02	
Freight and Express	716 55	
Mt. Vernon House	367 82	
Heating buildings	3,478 77	
Light	611 96	
Treasury	100 74	
Incidentals	118 16	
Care of buildings	881 45	
Sundries	25 30	
Insurance	87 10	
Light Station	1,483 01	
		\$15,828 59
General Repairs		4,206 11
Prizes		80 00
Text Books		361 80
		<hr/>
Cost of Maintaining the University for the Year		\$74,140 85
Observatory		\$289 04
Drill Hall		\$90 28
Track		393 25
Heating Plant		2,686 28
		<hr/>
		\$78,399 70
Cash Balance June 30, 1900		22,554 68
		<hr/>
		\$100,954 36

ACCOUNT WITH THE UNITED STATES GOVERNMENT APPROPRIATION
UNDER THE MORRILL ACT, FOR THE YEAR ENDING JUNE 30, 1900.

RECEIPTS.		
Received from the United States, July 13, 1900		\$25,000 00
EXPENDITURES.		
Department of Agriculture	\$6,750 00	
Mechanic Arts	8,600 00	
English Language	2,100 00	
Mathematical Science	3,200 00	
Natural or Physical Science	2,550 00	
Economic Science	1,800 00	\$25,000 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:—I beg leave to submit the following report regarding the School of Law for the years 1899-1900.

The total registered attendance during the school year 1899-1900 was forty-two. Of this number, twenty-five were members of the senior class, sixteen were members of the junior class, and one was a special student. The degree of Bachelor of Laws was conferred at the last Commencement upon twenty-six students, one of these being a man who had nearly finished the work of the senior year in 1897-1898, and who made up the deficiency in the spring of 1900. The young men composing this class made up an exceptionally able body of students; all, with a single exception, have already been admitted to the Bar, and with high honor; and they seemed reasonably sure to do credit to themselves and to the University in their professional careers.

The total registration for 1900-1901, to date, is thirty-nine. The slight decrease in attendance may be attributed to the change in the law by which three years are required to be spent in study before admission to the bar. Many students feel that they cannot afford the expense of a course of this length. I think, however, that the appointment of the State Board of Bar Examiners will eventually tend to increase greatly the attendance at the School; as the character of the examinations which the Board is likely to give, if it follows in the footsteps of similar Boards elsewhere, will be such as to make attendance at a law school almost a necessity. I am of the opinion that in a few years the normal attendance at the school will be seventy-five, and that a steady, though moderate growth, may be anticipated thereafter.

The students for the present year are classified as follows: seniors, 7; juniors, 9; first year, 20; post graduate, 1. The first year class is one of particular promise, all the men being apparently bright, and possessing in every case a good high school or college education. Colby, Bates, and Harvard colleges are represented by graduates, and a number of men have had partial courses in those institutions and in the University of Maine. Maine, Massachusetts, Vermont, New York, and Minnesota are the states represented; and there is one student from Nova Scotia. The counties are thus represented: Androscoggin, 1; Aroostook, 2; Cumberland, 1; Franklin, 1; Kennebec, 2; Lincoln, 2; Penobscot, 16; Somerset, 2; Washington, 5.

Mr. Arthur W. Price, a member of the class of 1900, has been engaged as an instructor.

On August 28, 1900, at the invitation of the American Bar Association, a meeting of representatives from some twenty-five law schools was held for the purpose of forming an association of American Law Schools. This school was represented at the meeting. An organization was effected and articles of association adopted. The purpose of the association is the advancement of the cause of legal education by the advocacy of higher standards and by emphasis upon the need of more thorough and adequate instruction. The Association promises to have a large influence. By a slight change in our requirements for admission this school will be eligible for membership. I recommend that the Dean of the school be given authority to sign the "Articles of Association" above referred to, thus making the school a member of the Association.

Respectfully submitted,

GEORGE E. GARDNER,

Dean of the School of Law.

REPORT OF THE DEPARTMENT OF ENGLISH

President A. W. Harris:

SIR:—Since making my last report a few changes have been made in the course in English, the chief being the introduction of a year's work in the study of fiction. This course, though somewhat experimental at present, promises to be popular. Some change has been made in the work in themes and oratory, by which the seniors are relieved of declamations throughout the year, and of themes during the second term.

The work in English is, I think, better done than ever before. A broader and more serious view is taken of the study of our mother tongue, a condition which promises well for the future.

The English department feels keenly two pressing wants,—a larger equipment of books for the historical study of English literature, and better provision for the study and practice of oratory. The first of these wants can be met by the outlay of a few hundred dollars. We need especially a larger number of standard editions of the English classics. We need too the Historical English Dictionary now in course of publication. To obtain this work a special appropriation will be necessary, as the usual sum set apart for the purchase of works on English philology would be inadequate.

Our second want is an instructor in oratory. Systematic instruction in elocution should be given, not to train men to become stage reciters, but to prepare them to acquit themselves well, wherever they may be called upon to address the public. A very necessary part of their training is practice in debating. Of course something is done along that line now, all that can be done under present conditions; but the work needs to be greatly extended. I am glad to be able to say in this connection that the students themselves, recognizing their needs, have for some time maintained a vigorous debating society, which is, I believe, giving one of the best "elective" courses in the University. But to secure most satisfactory results, the debates should take place in the presence of a competent critic, and the student should receive credit for his work; which is not the case at present. In other words, the work of the debating society should become a recognized part of the college course.

In closing I would call your attention to the fact that the appointment of a special instructor in oratory would not only strengthen the English department in that direction, but would afford time to develop the courses in English literature, offer advanced courses in rhetoric, in criticism, and in the historical development of the language. All these courses, though much needed, must wait for favorable conditions.

Respectfully submitted,

H. M. ESTABROOKE,

Professor of English.

REPORT OF THE DEPARTMENT OF LATIN

President A. W. Harris:

SIR:—The number of students in the entering class in Latin is about the same as last year; but it includes more that are by preparation and purpose likely to continue the study of Latin further on in their course. This fact is very encouraging. For the present year the number of students in elective classes in Latin is, of course, yet very small. The course in the Roman Elegiac Poets is being given for the first time.

The recent vote of the trustees to co-operate with the American School in Rome opens the courses of instruction in that institution, free of tuition, to graduates of this University.

About ninety lantern slides illustrating Roman art and architecture, as well as antiquities, have been imported since my last report, and work has been commenced upon the preparation of others from negatives loaned by Professor Merrill, of Wesleyan University.

Professor Kelsey, of the University of Michigan, has recently presented the department with a number of "squeezes" for the study of Roman inscriptions, and some illustrations of Roman art and architecture.

It would be a great convenience in using the lantern pictures in the possession of the department, if a suitable electric lantern were on hand, which could be set up with little delay, and used much more often than is convenient with the present apparatus. Such a lantern would be available for other departments often, and for more public lectures; and, since we have our own power, would cost little to run, after it were acquired.

Respectfully submitted,

KARL P. HARRINGTON,

Professor of Latin.

REPORT OF THE DEPARTMENT OF GREEK

President A. W. Harris:

SIR:—This department is now entering upon its second year. Only the work of the Freshman year is required. In addition to this, there was one elective class of eight students during the first year, and three elective courses are being taken the current year, besides the course in Italian Art. The success of the Department of Greek seems assured, and justifies the board of trustees in adding it to the college work.

I am convinced that it would be desirable to offer instruction in preparatory Greek, so that a student who so wishes might begin the study of Greek after coming to the University. Greek is a subject which many of the schools in the State cannot well offer; and to relieve them of the necessity of providing instruction in Greek would not only be of advantage to the schools, but it would eventually prove a boon to the cause of classics in the State. We can cover in a year and a half the Greek required for entrance and there would still be two years and a half left for college Greek, only one year of which is required. By taking this step we should in no sense be lowering the standards of classical education, but should rather be shifting the traditional two or three years' work of the schools to a point where more men and women could take advantage of Greek instruction. To offer instruction in beginning Greek to college students means merely that more students will take Greek under specialists.

Beginning Greek, with the language of the New Testament as a basis, is now offered in the University. For the present this course may be used as a substitute for the classical preparatory work of the first year, and students desiring to enter the classical course may make up the other requirements by outside instruction; but eventually the wisdom of including the preparatory Greek, which is done in a number of our best colleges, will, I trust, commend itself to you and the faculty.

Respectfully submitted,

J. H. HUDDILSTON,

Professor of Greek.

REPORT OF THE DEPARTMENT OF MODERN LANGUAGES

President A. W. Harris:

SIR:—The required, and the elective courses in French and German render it now possible for students in the Classical, Latin Scientific and Scientific Courses to obtain four years' instruction in either language. All students may obtain four years' instruction in these languages, divided in the ratio of three years of one language and one of the other, or two years of each.

The department will offer in this year's catalogue five full year courses in German, five full year courses in French, and one full year course in Spanish. It is unfortunate that, at present, Spanish cannot be made a two year course. On alternate years there is given a full year course in Italian.

The teaching force of the department consists of Mr. Goodell, Mr. Upton and myself, giving an aggregate of thirty-four hours of instruction per week, divided as follows: first year German, three divisions, four hours per week, 101 students; second year German, three divisions, two hours per week, 83 students; second year German, for students entering on German, four hours per week, 6 students; third year German, five hours per fortnight, 9 students. Reading of scientific German is being done by several students, as one of the requirements for the degree of M. S.

In French, owing to changes for this year in the entrance requirements in the regular college curriculum, there are this year no beginning classes, against 167 students in 1899. Two courses in second year French are offered; the regular full year course, two hours per week, 25 students; the other, a second year full course, five hours per fortnight, for those having offered French at entrance, and having taken already two hours of college French, 11 students. A course in French Literature, five hours per fortnight, is also given to 4 students, the period covered being that of the French Revolution.

A new course in advanced German has been added, making possible a more extended study of Faust than has been given heretofore, and, in the spring term, a study of the principal epochs in the History of German Literature. In connection with this course, the recently acquired complete collection of the Deutsche National Litteratur, 226 volumes, edited by Kürschner, and now in the modern language alcove of the library, will

be of invaluable assistance; the acquisition of complete sets of the more prominent German philological journals would, however, greatly increase the possibilities of advanced work in the department.

A small number of valuable reference books in French and Spanish have recently been added to the modern language alcove, among which are: Petit de Julleville, *Histoire de la Littérature Française*, 8 volumes; 10 volumes of the Rivadeneyra Collection of Spanish Authors; and the new Larousse Dictionary, 7 volumes.

The course in Elementary Spanish, five hours per fortnight, is given this year to fifteen students. German is taught twenty-two hours per week, being given by Mr. Upton and myself; French is taught ten hours per week, being carried entirely by Mr. Goodell, who also conducts the work in Spanish.

Respectfully submitted,

ORLANDO F. LEWIS,

Assistant Professor of Modern Languages.

REPORT OF THE DEPARTMENT OF PHILOSOPHY

President A. W. Harris:

SIR:—Within the past two years a very considerable increase has been made in the subjects included in the Department of Philosophy.

My personal teaching in the department, at the date of the last biennial report, embraced only General Psychology and Logic. Since then, instruction in Psychology has been so extended as to include Comparative Psychology and an advanced course in General Psychology, in which obscure, abnormal, or the more unusual mental phenomena receive consideration.

In addition, a course in Pedagogy has been established, embodying an application of the principles of Psychology to the art of teaching. Instruction in the Philosophy of History and in the History of Philosophy is also included in the work of this department.

Recognizing the value of all these courses as contributing to liberal culture in a very essential way, I desire to call more specific attention to two of them that impress me as possessing peculiar interest and value to students at the present period of development of philosophical investigation and study. I refer to Comparative Psychology and Pedagogy: the former on account of the light reflected from the study of other minds than ours upon our own mental processes, and the latter on account of its practical applications of all that we know of the laws of mind, both in their earlier and later manifestations.

After a course in General Psychology, the student is prepared to take up with advantage the study of the mental phenomena of animals, and, through points of difference, resemblance, or analogy, to comprehend more completely the wonderfully complex phenomena of his own intellectual and emotional life.

After the course in General Psychology, the student is prepared, also, to comprehend and apply the psychic principles which must underlie or furnish the basis of all successful teaching. These principles find their application in a helpful way, not only in the practice of the art of teaching, but also in our every day experiences, and in all the relations of life.

Were I to direct immediate thought to any other subject in this department, it would be to the advanced course in Psychology, in which our more unusual mental states receive specific attention and discussion.

I desire to state that in all the classes which it has been my pleasure to teach in the past two years the interest on the part of the students has been most gratifying and their advancement of an entirely satisfactory character.

Respectfully submitted,

M. C. FERNALD,

Professor of Philosophy.

REPORT OF THE DEPARTMENT OF POLITICAL, ECONOMY AND HISTORY

President A. W. Harris:

SIR:—The work in my department is essentially the same as when I made my last report. The transfer of Logic and History of Philosophy to Dr. Fernald has enabled me to devote my time and energies more fully to the proper work of my department. The classes under my instruction have shown commendable interest and have made good progress.

The addition to the library of many valuable works on history and political economy has been of the greatest advantage to the students, as well as to myself, since books of reference are in these lines what the laboratory is in the study of the experimental sciences.

The honor courses offered in this department are "Economic History," "Constitutional History," and "Roman Law;" the last two being especially recommended to those students who intend to enter the law as a profession.

In addition to my college duties, I give instruction in the School of Law, on Constitutional Law and Legal History. In these branches, the law students have done as well as could be reasonably expected during the necessarily brief time allotted.

Respectfully submitted,

A. E. ROGERS,

Professor of Political Economy and History.

REPORT OF THE DEPARTMENT OF MATHEMATICS AND ASTRONOMY

President A. W. Harris:

SIR:—No changes of importance have been made in the courses of instruction offered in this department since my last report.

Dr. Fernald, who for several years taught two classes in mathematics, is now giving all his time to the department of philosophy. Mr. A. B. Crathorne, tutor in mathematics, resigned at the close of the last college year. These changes, together with the increase of work resulting from the addition to our astronomical equipment, rendered necessary the appointment of two tutors in mathematics, instead of one. These are Mr. Louis Siff, a graduate of Cornell University, who was last year a teaching fellow in the University of Nebraska, and Mr. Roscoe M. Packard, M. A., Western Reserve University.

A notable addition to the facilities for instruction in astronomy has been made by the building of an observatory and the purchase, from Alvan Clark & Sons, Cambridgeport, Mass., of an eight-inch refracting telescope, equatorially mounted and completely equipped. Besides the equatorial, the observatory now contains the Repsold vertical circle, a very good instrument purchased in 1875, two sextants, two artificial horizons and a sidereal chronometer.

An additional pier has been provided, upon which a zenith telescope may be mounted when we are able to buy it. To render the equipment of the observatory quite complete for present purposes, there should be added a chronograph and an astronomical clock.

In May, 1900, I was granted leave of absence to observe the total eclipse of the sun. After spending a day at the U. S. Naval Observatory at Washington, D. C., I went to Barnesville, Ga., to take part in the work of the Naval Observatory party stationed there. I also visited their station at Griffin, Ga., and the Lick Observatory station at Thomaston, Ga.

Respectfully submitted,

J. N. HART,

Professor of Mathematics and Astronomy.

REPORT OF THE DEPARTMENT OF PHYSICS

President A. W. Harris:

SIR:—During the two years covered by this report instruction has been given in the usual required courses, and in elective courses as follows:

During 1899-1900, Mathematical Physics, two students; Preston's Light, seven students; three laboratory courses, in general physics, optics, and electricity, thirty-three students;—total for the year, forty-two students.

During 1900-1901, fall term: Meteorology, four students; two laboratory courses, thirty-two students;—total for the half year, thirty-six students. Of these students, three in the first year, and four in the second, were honor course students.

During this period Mr. Dorsey and Mr. Beck have been employed as tutors; Mr. Sidensparker and Mr. Caswell, as assistants. The work of these gentlemen has been highly creditable.

Appropriations from the library fund have enabled me to add a number of useful books to the department library. The arrangement whereby the department keeps its books in its own rooms has proved convenient, and has led to a great increase in the use of reference books by students. While we are well equipped with current periodicals, we are in need of complete sets of physical periodicals, and I recommend an appropriation from the library fund for the purchase of a set of the *Philosophical Magazine*.

The provision made for the department of mathematics and astronomy in the new building will relieve the crowded condition in this department by giving it two additional rooms, a large room for advanced laboratory work, and a smaller one for a private laboratory.

Since the last report the following pieces of apparatus have been added to the equipment; a *Société Genevoise* dividing engine, a Kelvin balance, a testing set, quadrant electrometer, dropped-fork apparatus for determining *g*, interference tubes, apparatus for capacity work, and sundry pieces of less value. For the course in meteorology new apparatus has been bought to make with that already on hand a fairly extensive equipment for this work.

One of the needs of the department is apparatus, which must be increased constantly to keep a physical laboratory from falling behind the times. Of this fact the University has always made liberal recognition. The large number of elective students in the department emphasizes a new need which I trust may be supplied as soon as possible. So much of the time of the head of the department is occupied with the required

courses that it is impossible to give a just share of attention to the advanced work. Moreover a course should be added in the mathematical theory of electricity, and the course already offered in laboratory research should be extended. These results could be accomplished if the tutor could take the Sophomore courses and some of his work could in turn fall to the assistant. This would require the appointment of an instructor and tutor instead of a tutor and assistant.

Respectfully submitted,

JAMES S. STEVENS,
Professor of Physics.

REPORT OF THE DEPARTMENT OF CHEMISTRY

President A. W. Harris:

SIR:—The work of the chemical department during the past two years has been carried on with such changes as were deemed necessary to increase its usefulness and to offer a somewhat greater range of subjects.

The new courses introduced for this purpose are: Ch 23, an advanced course in organic chemistry; Ch 24, a course in technical chemistry; Ch 25, a course in technical analysis; Ch 26, a course in physical chemical methods; Ch 27, a course in laboratory physiological chemistry; Ch 10, Chemical Readings, has been replaced by a course in the methods of analytical chemistry (recitations). The course in technical chemistry will be inaugurated in the spring term. It will consist of lectures upon the leading chemical industries, with especial attention to those which are already established, or might profitably be established, in this State. The lectures will be supplemented by recitations.

With the help of my assistant, Mr. Hayes, I am preparing a number of lantern slides for illustration.

I take pleasure in stating that many manufacturers and importers have kindly donated valuable specimens of raw and finished products. Acknowledgment is made of the generosity of the following firms: Pickhardt & Kuttroff, Heller & Merz, A. Klipstein & Co., aniline dyes and chemicals; the F. W. Devoe and C. T. Reynolds Co., a very extensive set of pigments; Laffinand Rand Powder Co., explosives; H. J. Hanssen, specimens illustrating the silk industry; J. F. Hanssen, raw wools; The German Kali Works, potash salts; The New Jersey Zinc Co., zinc, white and spelter; Berry Brothers, resins and varnishes; John A. Casey & Co., rosin oils; The Armour Glue Co., gelatine and glues; A. W. Smith, limited, oil soluble anilines. Many other additions may be expected before the opening of the course.

In connection with the lectures on the textile industries, an elementary laboratory course in dyeing will be carried on, which, it is hoped, may be expanded into one still more complete, consisting of advanced work in dyeing, calico printing and the analysis and examination of technical products.

During the year 1898 and 1899 I was assisted in the work of the department by Assistant Professor G. Ryland and Mr. Allen Rogers. During my leave of absence, the work of the department was carried on very successfully by Prof. Ryland and Mr. Allen Rogers, assisted by Mr. C. L. Small and Mr. C. W. Crockett, both graduates in the class of 1899.

I am happy to testify to the thoroughness and ability with which they discharge their duties.

At the Commencement in June, 1899, the degree of B. S. was granted to:

- C. W. Crockett, thesis on: "Solubility of the amylsulphates of calcium and strontium."
- C. L. Small, thesis on: "The Constitution of the tritngstate of chromium."
- D. L. Cleaves, thesis on: "The preparation and properties of paraethoxymetatoluene and paraethoxymetatoluene sulphonic acid."

At the Commencement in June, 1900, the degree of B. S. was granted to:

- J. E. Closson, thesis on: "The Kallitype process."
- J. A. Hayes, thesis on: "A volumetric process for the determination of magnesia."
- C. D. Holley, thesis on: "Liquid mixtures of constant boiling point."
- F. H. Mitchell, thesis on: "An investigation of the action of stannous chloride upon ammonic molybdate."
- D. L. Philoon, thesis on: "Examination of some electrolytic methods."
- F. M. Rollins, thesis on: "Qualitive tests and analysis of organic substances."

The degree of M. S. in chemistry was conferred upon Mr. Allen Rogers (B. S. 1897), thesis on: "The preparation and properties of the blue oxide of molybdenum."

Messrs. Hayes and Mitchell were retained as assistants and are performing their duties in a very satisfactory manner. Mr. C. D. Holley is assistant chemist in the Experiment Station.

During the past year the cabinet was increased largely, about one hundred specimens being a donation from the Mallinckrodt Chemical Company, who generously furnished a cabinet for the same.

Twelve large photographs of distinguished chemists have been placed upon the walls of Fernald Hall and a number of valuable books have been added to the library.

The department needs include apparatus, charts, and diagrams, chiefly for illustration of the new course in technical chemistry. Many valuable treatises have been published lately, some of which have not yet found their way into our library. For research work nothing is more necessary than complete sets of periodicals, and I very earnestly beg that a set of *The Journal of the London Chemical Society* be purchased for the department.

Respectfully submitted,

A. B. AUBERT,
Professor of Chemistry.

REPORT OF THE DEPARTMENT OF BIOLOGICAL CHEMISTRY

President A. W. Harris:

SIR:—The Department of Biological Chemistry owes its existence to the expansion of the courses in agricultural chemistry, and is maintained primarily for students in agriculture. From the first, however, biological chemistry has been made a part of the preparatory medical and the two pharmacy courses, and all four courses are usually represented in the classes.

Biological chemistry naturally falls into two divisions: the chemistry of the plant, and that of the animal. While the two branches are not kept wholly distinct, the greater part of the work of the fall term in these courses is devoted to the chemistry of plant life; in the spring term attention is given to the more complex chemistry of the animal body. The consideration of animal foods, a subject to which especial attention is given, necessitates a return to the plant, the work of the fall term being extended along these lines.

Text-books are used in both courses, supplemented at times by lectures. Under the present arrangement of studies it is impossible to apply fully the laboratory system, and demonstrations are substituted. The department has now at its command a stock of chemical reagents and an increasing amount of illustrative material.

Respectfully submitted,

L. H. MERRILL,
Professor of Biological Chemistry.

REPORT OF THE DEPARTMENT OF PHARMACY

President A. W. Harris:

SIR:—Since my last report four students have received certificates on completing the short course, and one has been graduated from the full course in pharmacy.

All of last year's class have good positions in the drug trade. Mr. W. B. Webster, of the class of 1898, whose sole store experience has been gained since his graduation, has been passed, with high rank, by the Massachusetts Board of Pharmacy, noted for its rigid examinations. He was one of three who succeeded out of twenty-five candidates.

Nearly all our graduates are in good positions, and are discharging their duties with credit to their alma mater. Most of them are in the retail drug trade, a few as proprietors; some in the wholesale trade; some in the governmental service, in chemical industries, in hospital dispensaries, and in medicine.

Attractive openings for college graduates are more certain in pharmacy than in most other technical lines. The general requirement, by the States, that the pharmacist pass an examination before a state board eliminates the unfitted or reduces him to a menial position, thus protecting the skilled pharmacist from the overcrowding of his profession, and frees him from a forced competition with the incompetent, conditions which are too common in most other industrial fields. Good openings have come to my notice which I could not fill. At the present time I have a request made for a registered student to fill a specially fine position, but I have no candidate. This anomalous trade condition is largely independent of the present improved economic conditions, and may be considered fairly permanent. It is most encouraging to young men desirous of making pharmacy their life work.

Schools of pharmacy have not profited fully by the increased public demand for educated pharmacists, for reasons which I have elsewhere sought more particularly to set forth. It is sufficient to note here our national trait of insisting on the shortest route to a desired end, without proper regard to methods and consequences, a course which leads to incomplete preparation that defeats the end, prevents the attainment of the material rewards sought, and, a still more serious thing, destroys scholarship and dwarfs mental development.

In this connection I have been called upon before to lament the relatively small number of students in the four years' course. The present sophomore class has six enrolled in this course, an indication of improve-

ment in this respect. The enrollment in pharmacy, in both the long and short course, taken in relation to the total number of students in the University, is larger than in the western universities whose catalogues I have had the opportunity of examining. There are eight in the entering class of the short course this year, the largest number since the more rigid entrance requirements became generally known to applicants.

It is in many ways desirable that a register of former students and graduates, with their present residences and occupations, be at once completed and published. To this end the co-operation of all possessing such knowledge is earnestly requested. As a possible means of helping alumni to a betterment of position, such knowledge may be of value, as indicated in an instance above cited.

Certain changes in the curriculum are in contemplation, or have been already announced in the catalogue, both in the short, and in the full course. Perhaps the most important contemplated change is the dropping of thesis work from the short course. The time allowable, and the previous training had in that course, are, in general, insufficient for the thoroughness requisite to thesis preparation. The time thus saved will be spent in the laboratories of pharmacy and microbotany—the latter to deal especially with the examination of powdered drugs.

The degree offered for the short course has been changed from Ph. G., granted three years after graduation, to Ph. C., granted on graduation. This new practice is in harmony with the prevailing custom of the university schools of pharmacy. A gold prize, given this year for the first time, offered for highest rank and general excellence in chemistry, open only to pharmacy students and on graduation, was won by George Pearson Larrabee.

The additions to the library, made since my last report, were urgently needed, and are now in frequent, sometimes daily, use in this department, and in the department of chemistry.

Theses presented since last report, most of which have been abstracted in the Proceedings of the State Pharmaceutical Association, or in the pharmacy journals, are:

Adulterations of Certain Powdered Drugs, by W. B. Webster.

Adulterations of Certain Essential Oils, by G. L. Hilton.

Urinalysis by the Pharmacist, by W. H. Crowell.

Bibliography of Diastase, by A. J. Nute.

Market Quality of Hydrogen Peroxide, by D. R. Taft.

Examination of Prescott and Gordin's method of Alkaloidal Estimation, by G. P. Larrabee.

Respectfully submitted,

W. F. JACKMAN,

Professor of Pharmacy.

REPORT OF THE DEPARTMENT OF BIOLOGY

President A. W. Harris:

SIR:—A course in general biology has been added to the list of biological studies this year. The course is intended for students who are beginning the study of this line of science, and serves as a preparation for further work in zoology, botany or physiology. Students whose interests lie for the most part along other lines of study, but who desire to get some knowledge of living things, will find this course adapted to their needs.

Like most of the courses of study that are offered in this department, the course in general biology consists of both recitations and laboratory work. This is believed to be a necessary arrangement. In the laboratory the student becomes familiar with certain facts that cannot be gained in any other way; but, in order that the facts may be arranged and their significance understood, recitations are quite as necessary.

The work in zoology has been arranged so that it extends through both the fall and the spring terms. The courses of the department are graded and extend through three years. Advanced work may also be elected.

Students taking advanced work usually elect some subject for investigation, and are encouraged to devise means for working out the problems that arise. They receive instruction regarding methods of laboratory work, such as staining, imbedding, sectioning, and reconstructing animals or plants, as the case may be, but the importance of direct observation on the living forms is not lost sight of.

Increased facilities in the way of apparatus and laboratory space have added greatly to the efficiency of the department.

Respectfully submitted,

GILMAN A. DREW,

Professor of Biology.

REPORT OF THE DEPARTMENT OF AGRICULTURE

President A. W. Harris:

SIR:—The work of the College of Agriculture is partly instruction and partly investigation, and comprises the four years' course in agriculture, the special courses in general agriculture, in horticulture and in dairying, and the Agricultural Experiment Station. The agricultural instruction is given by the departments of Biology, Biological Chemistry, Animal Industry, Bacteriology and Veterinary Science, Horticulture, and Agriculture. The work of investigation is carried on by the Experiment Station. The farm, the dairy, the poultry and sheep plants, the green-houses, orchards and gardens are maintained partly for purposes of instruction and partly for investigation. The funds for the maintenance of the Experiment Station are derived from the U. S. government and from fees, and no part of them come from the State treasury, endowments, or Federal appropriations for instruction purposes. The details of the work of the Station, including the receipts and expenditures, are given in its annual report, which makes Part II of the Annual Report of the University of Maine. The present report is concerned with the work of instruction.

Courses. The four years' course has been changed slightly in time arrangement and in studies pursued. The chief changes are in the line of progress in biological instruction. A course in forestry has been added. In order to facilitate the work of instruction and to avoid unnecessary yearly repetition of subjects it has been arranged to give certain technical subjects on alternate years.

The special courses in agriculture vary in length from two weeks to two years. As in the past, special students in agriculture are admitted at any time, and to such subjects, as they are fitted for by their previous training. Plans were perfected for the introduction of a correspondence course in agriculture during the present year; but the death of one member of the agricultural faculty, and the temporary withdrawal of another member from his usual work as the result of a severe accident, have made it necessary to defer the introduction of this course.

The Instruction. The facilities for instruction in agriculture are excellent, and superior to those afforded by most institutions. The growth from one man in the department, with very inadequate facilities, to the present condition of six professors, with modern and well 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 have contributed greatly to the advances made in agriculture; and future improvements in the science and practice of agriculture will likewise depend largely upon such graduates.

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 is greatly aided by the cordial appreciation and sympathy of the Maine Board of Agriculture, which puts it 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, before granges, and other farmers' organizations, are ways in which the educational facilities of the college are used to promote better thought and practice among the farmers of the State.

CHAS. D. WOODS,
Professor in Charge.

REPORT OF THE DEPARTMENT OF HORTI- CULTURE

President A. W. Harris:

SIR:—Since my last report the work of the department of horticulture has been conducted along the same general lines as in previous years, although the course of instruction has been rearranged.

More attention has of late been given to practical details of commercial horticulture, and, through the medium of farmers' institutes and the State Pomological Society, much more time than formerly has been spent in lecturing in different parts of the State.

In view of the vast forest interests of the State, it seems of special importance that a systematic study of the problems relating to forest conservation should be conducted at the University. As a beginning in this direction, I have offered an elementary course in forestry, which is elective in the Agricultural, Scientific, and Latin-Scientific courses. Should this course meet with your approval, I would recommend the extension of the work, and at an early date the establishment of a school of forestry, with a reservation where practical illustrations may be made.

In addition to the course in forestry, a course in Plant Pathology has been added to the regular work in horticulture. This course is not designed to interfere with the regular course in cryptogamic botany, but deals particularly with the diseases of the more commonly cultivated plants.

The equipment for effective work in horticultural lines is equalled by very few colleges. My only regret is that the number of young men and women who take advantage of the opportunities offered is not larger.

Substantial improvements have been made in the campus, particularly in the extensive plantings made and the construction of new walks and drives; while the growth of trees and shrubs already planted makes apparent something of the design of previous work.

In the botanical work of the department I have been assisted by Mr. Elmer D. Merrill and by Mr. Oliver O. Stover, both of whom were faithful and conscientious in performing the work assigned them.

In conclusion I wish to express to you my appreciation of the interest you have shown in the department, and the substantial aid in executing the plans made.

Respectfully submitted,

W. M. MUNSON,

Professor of Horticulture.

REPORT OF THE DEPARTMENT OF ANIMAL INDUSTRY

President A. W. Harris:

SIR:—My work as Professor of Animal Industry includes the teaching of the following subjects: Agricultural Engineering, Stock Breeding, Stock Feeding, Dairying, and Poultry Industry. The instruction in the classroom is illustrated in the field, barns, sheep fold, poultry buildings, incubator room, and dairy building.

The equipment for poultry instruction is very good, but should be added to by the erection of a small piped brooder house. A suitable building, properly equipped, would probably cost \$500.

The wooden floor of the dairy building has been replaced by one of cement, which is a decided improvement. The walls and ceiling, which are now of lath and plaster, suffer from the jar from the machinery and should be sheathed with wood.

We now have on the farm representatives of Jerseys and of four breeds of sheep, viz., Dorsets, Shropshires, Oxfords, Hampshires, and five Cheviots. I regard it necessary that we add to the cattle, two Ayreshires, two Shorthorns, two Herefords, and two Holsteins; and to the sheep, two Cotswolds, two Leicesters, two Merinoes and two Southdowns, so that students may gain a knowledge of these important breeds by the study of live specimens. With this object I have been accustomed to visit, with the students, blooded herds in this vicinity; but, unfortunately, there are few such in this section of the State, and at the best such visits do not allow of close study.

The arrangement, recently made, by which my teaching is all done in the spring term, has given me during the fall term unusual opportunity for public lectures on agricultural subjects at farmers' institutes and other meetings. Since my last report, I have delivered in all parts of the State over one hundred such addresses.

Respectfully submitted,

G. M. GOWELL,
Professor of Animal Industry.

REPORT OF THE DEPARTMENT OF CIVIL ENGINEERING

President A. W. Harris:

SIR:—During the two years since my last report the work of the department has been conducted without important changes. Instruction is given to the sophomores in Plane Surveying; to the juniors in Higher Surveying and Railroad Engineering; and to the seniors in Hydraulic, Sanitary, and Structural Engineering. Besides these technical subjects, instructors in this department teach to all of the engineering students Free-hand Drawing, Mechanical Drawing, Descriptive Geometry, and Mechanics.

During this year there are fifty-six students in civil engineering in the three upper classes, divided as follows: seniors, 8; juniors, 20; sophomores, 28. Eight men were graduated from the department in 1899, and eighteen in 1900. These men have found remunerative employment in engineering work, so far as it has been desired.

We have recently purchased a Fteley current meter and a Dumpy level. The increasing number of students will render necessary a further increase in instrumental equipment. The space and facilities for instruction in drawing are, I think, ample.

During the academic year of 1899-1900 I was assisted by Mr. C. P. Weston, instructor; Mr. W. A. Murray, assistant; and Mr. H. H. Clark, tutor in drawing. This year Mr. Weston remains as instructor, Mr. C. H. Lombard and Mr. P. R. Goodwin are assistants, and Mr. C. L. Cole is tutor in drawing.

Respectfully submitted,

N. C. GROVER,
Professor of Civil Engineering.

REPORT OF THE DEPARTMENT OF MECHANICAL ENGINEERING

President A. W. Harris:

SIR:—This report covers not only the instruction work of the Department of Mechanical Engineering, but also the construction and repairs throughout the University, which are in my charge.

The work of instruction in this department remains as at the time of my last report, except for a few unimportant changes which are noted in the catalogue. Mr. Perley Walker, who was instructor in mechanical engineering for four years, has severed his connection with the University in order to take up the study of naval architecture. He was an efficient teacher, who had the interests of the department very much at heart, and was unsparing in his labors to improve and maintain the standard of instruction. He has been succeeded by Mr. F. H. Vose, a graduate in the class of 1900.

Among the apparatus added during the two years just passed are a gas engine indicator of the Crosby make, a 15-in. Handy-Norton Lathe, a Universal Grinding Machine, and a brass furnace. The capacity of the shop, and the variety of instruction in shop work, have both been increased. Mr. Steward has used the construction method in his shop instruction more largely than ever before, and our experience indicates that it may wisely be extended, on account of the active interest which it arouses in the student.

The department is on a fair footing compared with the past, but there is still urgent need of development, especially in the provision for laboratory work. A mechanical laboratory should be constructed in connection with the power plant, and I urgently recommend that immediate steps be taken for this development. The shop building is of wood and was built eighteen years ago. It has been enlarged and rearranged from time to time to suit new demands, and has served its purpose admirably, but hard use and age are telling upon it, and its days are numbered. It is sadly in need of repairs, which will nearly amount to rebuilding, and is growing worse rapidly. It is no longer sufficient for our work and grows more unsatisfactory every year. From the nature of its uses, it is much more liable to fire than any other building on the campus. I consider that the time has come when we can no longer delay the building of a brick shop. In connection with it, there should be a general repair shop, rooms for storage of lumber, paint and other materials.

WATER SUPPLY.

Until last year the water supply depended upon a single pump, but as this had been in constant use for ten years and repairs were likely to be necessary at any time, it was considered unsafe to put our absolute dependence upon it. Accordingly a 5-inch x 8-inch triplex power pump with a capacity of 100 gallons per minute was installed. This is connected by an electric motor with either the steam engine or the gas engine. By use of the latter a fire stream can be started in a very few minutes, and maintained until steam can be furnished for the steam pump. With the pump it was necessary to install a 5 horse power electric motor to drive it, and other necessary instruments and wiring. A separate 4-inch galvanized iron suction pipe was laid to the river, and the whole system supplied with a 6-inch water gauge. In order to supply the house occupied by Prof. Harrington, the Kappa Sigma House, the Mt. Vernon House and the Phi Gamma Delta House with fire protection, a 4-inch pipe was laid from the main near Coburn Hall to a point near the Phi Gamma Delta House. Two hydrants have been put in place, so that each of these buildings can be reached by two lines of fire hose. This pipe has been tapped by one running to the Webster House, Hooper house, and the Alpha Tau Omega House. With this extension the University has no responsibility beyond supplying water. The system has been extended to the drill hall, and connection made with the sewer. The standpipe has been thoroughly cleaned and painted inside and out. Several braces in the tower, which were found in bad condition, have been renewed, and a new frost proof box put around the supply pipe. Our water system is a double one, including not only the main supply of water drawn from the river, but a second one for drinking water, pumped from an artesian well. A single system would be easier to maintain, but would involve an installation expense either for filtering the river water, or for boring wells to supply the whole amount needed. Our consumption is not large, seldom exceeding 20,000 gallons a day. The present artesian well cost only \$150, exclusive of windmill and power, and furnishes about 8,000 gallons of water per day. It therefore seems easy to obtain at a moderate expense a supply of pure artesian water sufficient for all purposes. The present supply of artesian water is pumped by a windmill, and is satisfactory when the wind blows, but fails occasionally. I urge that the artesian well system be extended until an adequate supply is found, and that the use of river water be entirely discontinued. If this seems impracticable, I consider it necessary that another well be driven at a convenient point, and equipped with an electric pump for use when the supply from the windmill is exhausted.

HEATING PLANT.

In the summer of 1899 extensive repairs to the heating system of Fernald Hall and Oak Hall became necessary, and these two buildings, and Wingate Hall, which stands between them, were connected with the boiler at the shop by means of an underground pipe laid in a tunnel.

Owing to a difficulty in the plan on which the tunnel was constructed, and the inferior quality of the cement used, the tunnel was flooded in the spring and the use of the pipe became too expensive to be continued. Heat was furnished the several buildings by their own boilers, which have not been removed. During the summer of 1900 this tunnel has been rebuilt entirely of brick, with concrete bottom, and ample drains. The system is so piped that the exhaust steam from the engines can be turned on and used to heat the dormitory, whenever the engine is running. As now constructed, the system seems entirely successful. A supply and return pipe have been laid to the drill hall for use when the building is completed.

The present demands upon the boiler in the light station are entirely beyond its capacity, and in cold weather it will be extremely difficult to make it do the work demanded of it. The load at all times is entirely too heavy to allow economical results, and an accident, requiring repairs, would leave several buildings without heat. It is imperatively necessary that during the coming summer an additional boiler, similar to the one now installed, be added to the plant. The work already done is a very important beginning of the coming heating, power, and light plant, but, when such a plant is established, it should be placed in a new location. This plant should be installed at the earliest possible date, as the installation of additional boilers in the present location would involve a large waste. I respectfully urge that every possible effort be made to provide a plant for supplying heat, light, and power to every available building on the campus.

I earnestly call attention to the need of a carefully designed ventilating system for Coburn Hall and Fernald Hall. The heating pipes in the basement of Oak Hall need to be rearranged to allow the condensed water to return to the heating plant.

CONSTRUCTION AND REPAIRS.

Lavatories and urinals have been placed on the second and third floors of the men's dormitory, the rooms on the fourth floor have been repainted and repapered, and the woodwork in all the halls has been shellaced. I suggest that the walls of rooms on the first, second and third floors be tinted and the woodwork repainted. The rooms in Wingate Hall, formerly occupied by the Young Men's Christian Association, have been divided into recitation rooms and an office, and a very satisfactory room in Oak Hall provided for the Association.

The Experiment Station has been enlarged by an addition, two stories high and twenty-five feet square. The north tenement of the Maples has been painted and papered throughout, the cellar wall relaid, electric lights introduced, and much of the old plastering repaired. This tenement is now in a very satisfactory condition. A bathroom has been added to the south tenement, and the sewer relaid. The whole building has been painted on the outside. An observatory has been built for the department of Mathematics and Astronomy. The wooden floor in the dairy building has been replaced by one of cement. The cellar wall on

the north side of the Commons building has been relaid, and the roof reshingled. The building should be repainted during the coming year. The shed and outbuildings are in bad condition, and need quite extensive repairs. The ell of the house occupied by Prof. Harrington has been raised one story, a bathroom furnished, a piazza built on the east side, the cellar cemented, a large part of the house painted and papered, and electric lights installed. It is now in the best condition in every respect.

Respectfully submitted,

WALTER FLINT,

Professor of Mechanical Engineering,

In Charge of Construction and Repairs.

REPORT OF THE DEPARTMENT OF ELECTRICAL, ENGINEERING

President A. W. Harris:

SIR:—Since taking charge of the Department of Electrical Engineering in September, 1899, changes have been made in the electrical work of the course as follows:

Junior year, spring term: work in "Dynamo Design," taken up in lectures, has been introduced as a part of the course in Electricity and Magnetism. Senior year, fall term: a required course in "Alternating Currents" has been substituted for two elective courses in "Telephony" and "Power Stations." The text book used is Jackson's "Alternating Currents and Alternating Current Machinery." The course in Laboratory Electricity has been improved and developed by reason of an increase of equipment to be described later. A laboratory course in the senior year, spring term, "Alternating Currents," has been introduced, taking a part of the time formerly used in "Electrical Design." This change has been made possible by the increase of equipment.

In the spring term of 1900 a short course in "Polyphase Alternating Currents" was given in place of Theoretical Electricity." Beginning with the present year a course in "Electrical Signalling" including telegraphy and telephony will be substituted for "Theoretical Electricity."

Two courses in Laboratory Chemistry have been introduced as electives in the Junior year. These are Qualitative Analysis, fall term, and Quantitative Analysis in the spring term. These courses are of great general value, and will serve as a preparation for work in Electro-Chemistry, which it is hoped may soon be taken up.

Beginning with the present academic year changes have been made in the electrical work of the Mechanical Engineering course as follows: Junior year, fall term: a new course on "Dynamios" has been substituted for the course in "Electricity and Magnetism." The new course is better suited to the needs of Mechanical Engineering students. Senior year, spring term: a course in "Dynamo Laboratory Work" has been introduced. This course is intended to render the students familiar with the care, running, and testing of direct current generators and motors.

The equipment for laboratory and experimental work has been materially increased. A room in the basement of Wingate Hall has been fitted up with benches and stands for machines, switch board, distribution board, distributing circuits, water rheostats, etc. Over \$2500 has been expended for this purpose and for new equipment. The additions

have proved satisfactory, and provide very good facilities for direct current work. For the work in alternating currents the provisions are not as good. As an addition to the laboratory equipment the following is recommended:

1 5 K. W. alternating and direct current generator.....	\$300 00
1 4 H. P. induction motor.....	250 00
2 indicating wattmeters, 10 K. W.	200 00
2 alternating current ammeters.....	100 00
2 alternating current voltmeters.....	100 00
2 2 K. W. transformers.....	50 00
	\$1,000 00

POWER PLANT.

The care of the Power Plant was divided between the Mechanical and Electrical Departments until October, 1899, but at that time it was transferred to the Electrical Department alone.

The plant furnishes light for buildings and grounds, steam for heating several of the buildings, steam power for running the shop, and electrical power for the pumping station, for the electrical laboratory, and for running machinery for the Experiment Station and farm. The lights include four arc lights and over thirteen hundred incandescent lamps.

The boiler is in good condition, but is worked beyond its normal capacity during a large part of the cold weather. The storage battery is not in good condition. The active material of the plates is nearly exhausted. It serves, however, for carrying a small lighting load during portions of the twenty-four hours. The remainder of the equipment is in good working order and adequate to meet the requirements.

The following apparatus has been added during the past year:

15 horse power Otto gasolene engine.....	\$739 00
Installation of gas engine together with necessary pulleys, belts, piping, etc.	240 00
50 horse power Bundy exhaust steam oil separator.....	28 00
100 horse power National feed water heater.....	84 00
Pipe and labor installing separator and heater.....	30 00
200 to 500 ampere general electric circuit breaker.....	40 00
200 ampere recording wattmeter.....	55 00
Installing circuit breaker and wattmeter.....	10 00
Switches	20 00
Carbon brushes and holders for both dynamos.....	38 00
	\$1,284 00

The reason for installing this new apparatus was as follows: The gasolene engine was bought to replace in part the storage battery in carrying moderate loads, when the steam engine was not running. It has been of decided advantage, also, as an aid to the steam plant at times of heavy duty. During the summer vacation it has been an economical source of all the power required.

The Bundy operator serves to separate the cylinder oil from the exhaust steam used in heating, and allows the water returning from the heating system to be fed to the boiler without injury. The feed water heater utilizes a part of the heat in the exhaust steam in heating feed water. It is an aid to economical running and adds to the capacity of the plant. The circuit breaker was installed as a safeguard to apparatus, and offers less interruption to service than the blowing of a fuse. The recording wattmeter serves to give an accurate record of the electrical output of the plant.

New carbon brushes were put on the dynamos in place of copper brushes, as requiring less attention, keeping commutators in better condition and adding materially to their life.

The boiler in the power station, as before stated, is worked beyond its normal capacity during quite a part of the cold weather. It is recommended that another boiler of at least 100 horse power capacity be installed to serve as a reserve in case of breakdown, and as an auxiliary during times of heavy duty.

Respectfully submitted,

H. S. WEBB,

Professor of Electrical Engineering,

In Charge of Heat and Light Station.

REPORT OF THE LIBRARIAN

President A. W. Harris:

SIR:—The two years covered by this report are the most prosperous the library has enjoyed. The increase in the number of books and the use made of them by students are gratifying. The interest manifested by the members of the faculty is particularly pleasing.

There have been added to the library during the years 1899 and 1900 5,696 books and 1,413 pamphlets. The increase is almost double that of the two years immediately preceding, and about four times that of any earlier two years. The growth in circulation was about 25 per cent. The total number of volumes in the library at present is 19,650, and of pamphlets about 8,000.

The increase in growth and circulation has made necessary the employment of a regular assistant since the spring of 1898. Miss Geneva Ring Hamilton, a graduate of the library course formerly conducted here, has served since last spring in a very satisfactory manner. Mr. Harold E. Cook acted as assistant librarian for the School of Law until last June, and this year Mr. Nathan G. Foster is serving in that same capacity.

The newspaper reading room in Oak Hall was required for other purposes, and since the fall of 1899 the papers have been on file in the reading room in Coburn Hall under my direct supervision. This arrangement has been, on the whole, more satisfactory than the former one.

One of the most imperative needs of the library is the completion of sets of periodicals. Scientific and technical text-books are out of date almost as soon as published. Current numbers of periodicals give information of the latest advances in knowledge, and back volumes furnish a record of the work of the past. The growth in the number and wealth of libraries has resulted in a great increase in the demand for sets of periodicals and is causing a rapid advance in price. The policy of liberal expenditures for current periodicals, and for the completion of the files of the important ones, is that pursued by all progressive libraries.

The increase in the number of volumes in the library has resulted in greatly overcrowding the stack room. The removal of the University offices from Coburn Hall, and the assignment of the rooms now occupied by them to the library, will give, temporarily, sufficient accommodations; but the need for a library building within a few years is apparent.

Respectfully submitted,

RALPH KNEELAND JONES,

Librarian.

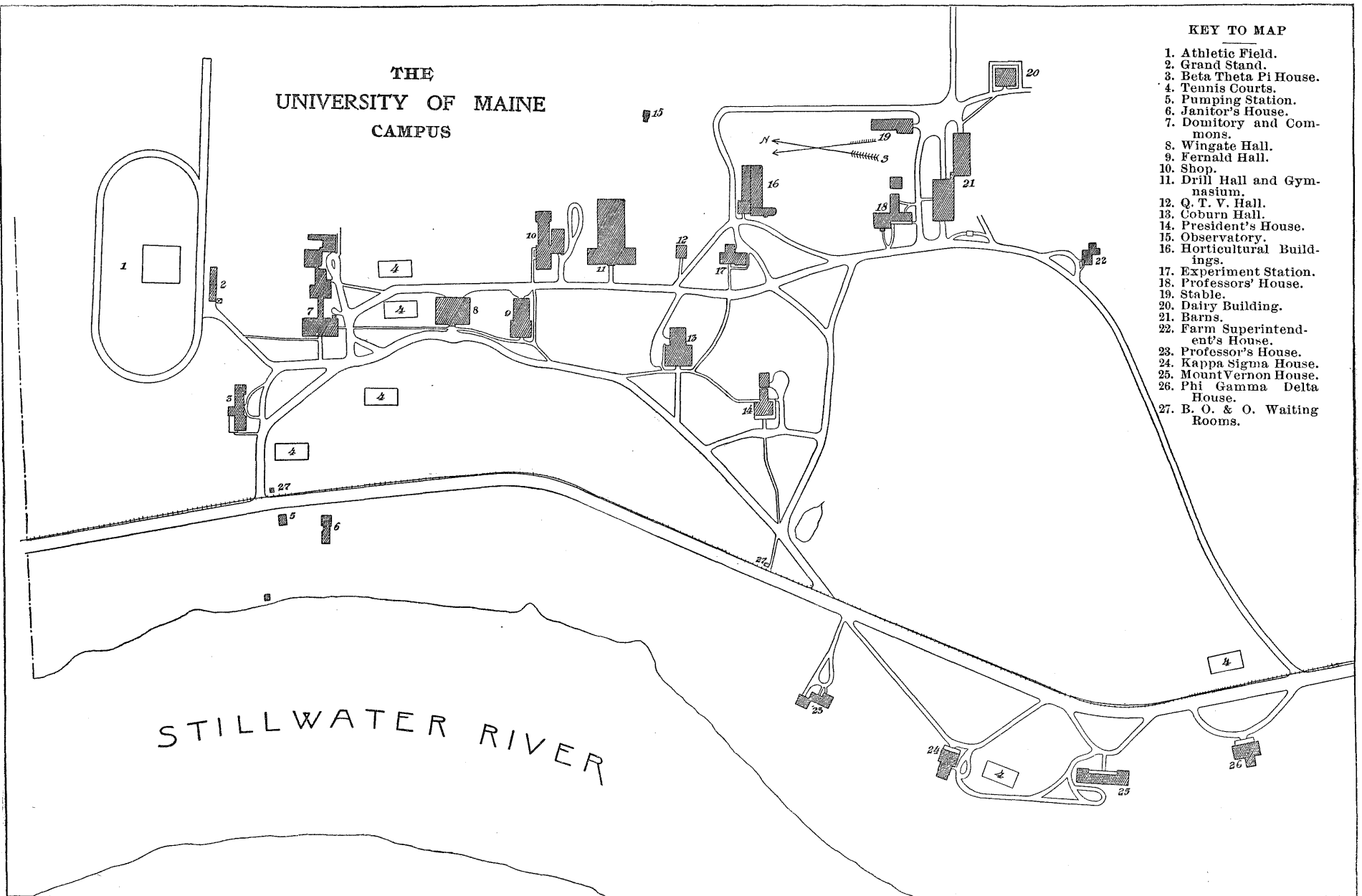


GENERAL VIEW OF THE CAMPUS.

THE
UNIVERSITY OF MAINE
CAMPUS

KEY TO MAP

1. Athletic Field.
2. Grand Stand.
3. Beta Theta Pi House.
4. Tennis Courts.
5. Pumping Station.
6. Janitor's House.
7. Dormitory and Commons.
8. Wingate Hall.
9. Fernald Hall.
10. Shop.
11. Drill Hall and Gymnasium.
12. Q. T. V. Hall.
13. Coburn Hall.
14. President's House.
15. Observatory.
16. Horticultural Buildings.
17. Experiment Station.
18. Professors' House.
19. Stable.
20. Dairy Building.
21. Barns.
22. Farm Superintendent's House.
23. Professor's House.
24. Kappa Sigma House.
25. Mount Vernon House.
26. Phi Gamma Delta House.
27. B. O. & O. Waiting Rooms.





CATALOGUE

OF THE

University of Maine

1900-1901



ORONO, MAINE

AUGUSTA, MAINE
KENNEBEC JOURNAL PRINT
1901

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CALENDAR

FALL TERM, 1900.

September 17,	Monday,	Arrearage examinations begin.
September 18,	Tuesday,	Entrance examinations begin.
September 19,	Wednesday,	Fall term begins.
November 27,	Tuesday,	Meeting of the Board of Trustees.
November 27,	Tuesday,	Thanksgiving recess begins, 4.30 P. M.
December 4,	Tuesday,	Thanksgiving recess ends, 7.45 A. M.
December 7,	Friday,	Sophomore prize declamations.
December 20,	Thursday,	Christmas recess begins, 4.30 P. M.

1901.

January 1,	Tuesday,	Arrearage examinations begin (Spring term studies).
January 3,	Thursday,	Christmas recess ends, 7.45 A. M.
January 25,	Friday,	Fall term ends.

SPRING TERM, 1901.

January 25,	Friday,	Entrance examinations begin.
January 28,	Monday,	Spring term begins.
February 22,	Friday,	Washington's birthday.
April 3,	Wednesday,	Easter recess begins, 4.30 P. M.
April 8,	Monday,	Arrearage examinations begin (Fall term studies).
April 10,	Wednesday,	Easter recess ends, 7.45 A. M.
May 17,	Friday,	Ivy day.

May	25, Saturday,	Senior vacation begins.
May	30, Thursday,	Memorial day.
June	8, Saturday,	Junior exhibition.
June	9, Sunday,	Baccalaureate sermon.
June	10, Monday,	Convocation.
June	10, Monday,	Class day.
June	11, Tuesday,	Meeting of the Board of Trustees.
June	11, Tuesday,	Exhibition drill.
June	11, Tuesday,	Receptions by the fraternities.
June	11, Tuesday,	Reception by the President.
June	12, Wednesday,	COMMENCEMENT.
June	12, Wednesday,	Commencement dinner.
June	12, Wednesday,	Meeting of the Alumni Association.
June	12, Wednesday,	Commencement concert.
June	13, Thursday,	Entrance examinations begin.

FALL TERM, 1901.

September	16, Monday,	Arrearage examinations begin.
September	17, Tuesday,	Entrance examinations begin.
September	19, Thursday,	Fall term begins.
November	26, Tuesday,	Meeting of the Board of Trustees.
November	26, Tuesday,	Thanksgiving recess begins, 4.30 P. M.
December	3, Tuesday,	Thanksgiving recess ends, 7.45 A. M.
December	6, Friday,	Sophomore prize declamations.
December	19, Thursday,	Christmas recess begins, 4.30 P. M.
December	31, Tuesday,	Arrearage examinations begin (Spring term studies).

1902.

January	2, Thursday,	Christmas recess ends, 7.45 A. M.
January	26, Friday,	Fall term ends.

SPRING TERM, 1902.

January	26, Friday,	Entrance examinations begin.
January	29, Monday,	Spring term begins.
June	11, Wednesday,	COMMENCEMENT.

CALENDAR OF THE SCHOOL OF LAW

1900.

October	3, Wednesday,	Fall term begins.
December	19, Wednesday,	Fall term ends.

1901.

January	9, Wednesday,	Winter term begins.
March	20, Wednesday,	Winter term ends.
March	27, Wednesday,	Spring term begins.
June	12, Wednesday,	COMMENCEMENT.

1901.

October	2, Wednesday,	Fall term begins.
December	18, Wednesday,	Fall term ends.

1902.

January	8, Wednesday,	Winter term begins.
March	19, Wednesday,	Winter term ends.
March	26, Wednesday,	Spring term begins.
June	11, Wednesday,	COMMENCEMENT.

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For all other students in the Mechanical Engineering Course, Professor Flint.

For all other students in the Electrical Engineering Course, Professor Webb.

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 its 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 receives \$25,000 annually for its more complete endowment and maintenance.

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.

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 buildings, 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 Exchange Building, Bangor, at the corner of Exchange and State streets.

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, instrument rooms, and private offices for the professors in the engineering departments. On the second floor are the offices and recitation rooms of the professors of physics, Greek, and Latin, the physical laboratory, and the apparatus room. On the third floor are large, well lighted drawing rooms. In the basement are the dynamo laboratory, and the testing room of the department of civil engineering. The testing room contains a Riehle testing machine of 60,000 pounds capacity, cement testing machine, etc. The dynamo laboratory is provided with six direct-current dynamos, two alternating-current dynamos, a rotary converter, transformer, ammeters, voltmeters, wattmeters, rheostats, switches, etc., affording accommodations for fifteen students in a section.

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 a room occupied by the Young Men's Christian Association. It 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 University from 1879 to 1893, is a two-story brick building, situated south of Wingate Hall. It contains fifteen rooms devoted to the departments of chemistry and pharmacy. On the first floor are the quantitative and pharmaceutical laboratories, offices 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 is well supplied with apparatus.

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 biology, civics, and modern languages. Over the library is the museum, extending through two stories. The collections are large and constantly increasing.

THE DRILL HALL AND GYMNASIUM.—To the northeast of Coburn Hall stands the new Drill Hall and Gymnasium, erected in 1900, the largest, as well as the latest, addition to the university buildings. The front part contains on the ground floor the offices of the president, secretary, and cashier, a board room, two recitation rooms for the use of the military and mathematical departments, and the private office of the professor of mathematics; the second floor contains the university chapel, with a large pipe organ in the choir gallery. In the basement of the drill hall proper are the base ball cage, bowling alleys, lockers for men and women, lavatories, rooms for storage, etc. The drill hall itself is 100 by 62 feet, and is encircled by a 9-foot running track suspended from the roof. As a gymnasium it will be equipped with complete apparatus of the most approved kind.

THE OBSERVATORY.—The astronomical observatory stands upon a slight elevation to the east of Coburn Hall. The equatorial room is equipped with an eight-inch refractor of the best modern construction, with finding circles, driving-clock, filar micrometer and other accessories. In the transit-room is a Repsold vertical circle of two-inch aperture. These instruments, together with sextants, sidereal chronometer, etc., furnish excellent facilities for instruction in both descriptive and practical astronomy.

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 a one hundred horse power boiler, a fifty horse power Corliss engine, a fifteen horse power Otto gasoline engine, the dynamos and storage battery, which comprise the lighting plant. Students in the Electrical Engineering Course receive instruction in the care and running of this equipment.

THE EXPERIMENT STATION BUILDING.—South of the Machine Shop stands a two-story brick building with basement, which is occupied by the Agricultural Experiment Station. In the basement are rooms for the storage and preparation of samples for analysis, the calorimeter room, and the boiler room. On the ground floor are the chemists' office, the laboratories 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 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 six horse power engine.

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 a parlor, the rooms of the University Guild, 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 an assembly or study room. 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 establishments under the supervision of matrons.

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 boarding house, and three residences occupied by members of the faculty.

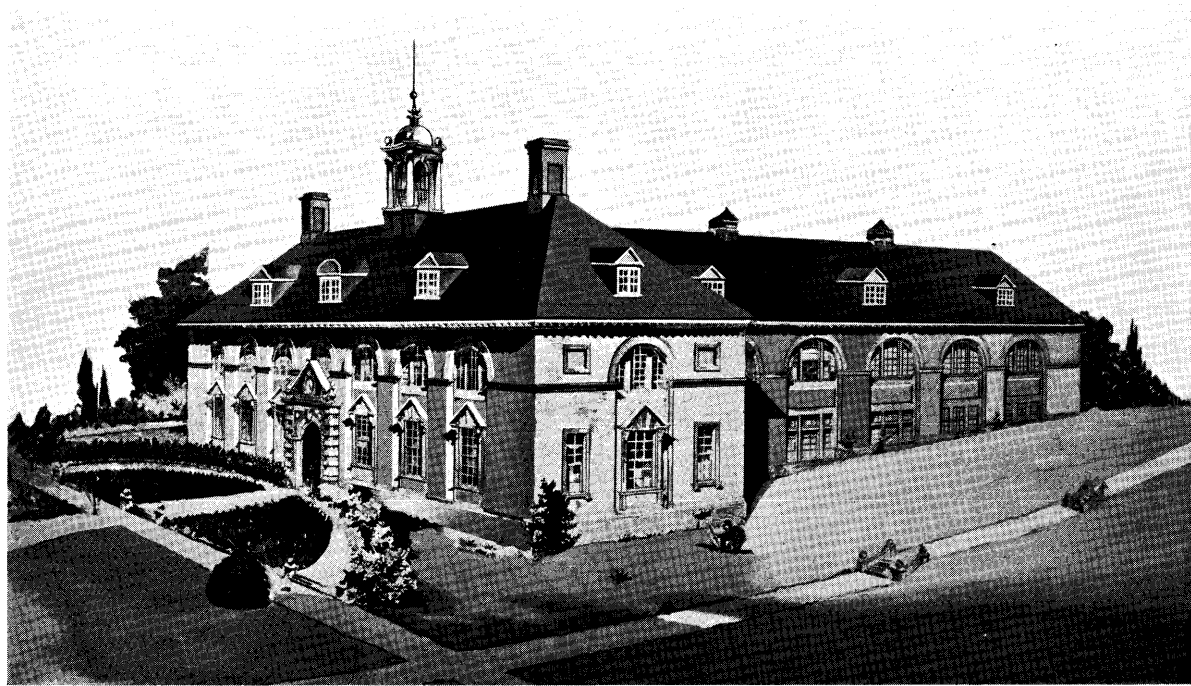
THE ATHLETIC FIELD.—Alumni Field, so called because funds required for its construction were contributed by the Alumni Association, is located at the northwestern extremity of the campus, about 1,200 feet from the Gymnasium. It contains a quarter-mile cinder track, with a 220 yards straightaway, and is graded and laid out for foot ball, base ball, and field athletics.

THE LIBRARY

The library is located in Coburn Hall. It contains over eighteen thousand bound volumes and seventy-five hundred pamphlets. Some fifteen hundred volumes of special value to the Experiment Station are kept in the Station building, and twenty-five hundred law books in the rooms of the School of Law. Books needed for constant reference by various departments are kept in the departmental rooms.

Nearly half of the volumes in the library have been added during the last three years, and the greater portion of them have been selected by the heads of departments with special reference to the desirability of making the library of the greatest possible working value. Its importance for general reference is also kept in view.

The library is classified according to the Dewey system, slightly modified; there is a card catalogue, both author and subject; the shelves are open to all. Students may borrow two volumes at a time, to be retained two weeks, when they may be renewed unless previously called for; a larger number may be obtained in special cases upon application to the librarian; there



THE DRILL HALL AND GYMNASIUM.

is a fine of two cents a day for books kept over time. Officers and alumni of the University may borrow any reasonable number of volumes without time limit except that all books must be returned at least nine days before Commencement, and the return of any volume at any time may be required by the library committee. Other suitable persons may obtain the privileges of the library upon application. Help may always be obtained by those who need it from the librarian and the assistants.

The library is a designated depository for the publications of the United States Congress, and also receives publications of different departments not included in the depository set. All the publications of the State of Maine are received. About three hundred of the most important literary, scientific and technical periodicals, both American and foreign, are regularly received. The leading papers of Maine, together with a selected list of daily papers published in the large cities, are on file.

The library is open daily from 8 A. M. to 12.00 M., and from 1.30 to 5.30 P. M., Sundays and legal holidays excepted.

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. A fine collection of economic minerals has been received from the National Museum, and an educational series of rocks, from 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 collections of the 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 herbarium comprises 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, 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.

ORGANIZATIONS

FRATERNITIES.—The following fraternities are represented in the University: $\Phi \Gamma \Delta$, $B \Theta \Pi$, $K \Sigma$, $\Delta T \Omega$, $\Phi K \Sigma$, ΔP , $I \Phi$, $\Phi \Gamma$ (for women).

ASSOCIATIONS.—The following is a list of other organizations existing in the University: Scientific Association, Philological Club, French Club, University Guild, Debating Society, Electrical Society, Honorary Society (Phi Kappa Phi), Young Men's Christian Association, Athletic Association, Publishing Association, Press Club, Glee Club, Instrumental Club, Orchestra, Band, Photographic Society.

THE SCIENTIFIC ASSOCIATION.—The Scientific Association was organized to promote interest in scientific study and investiga-

tion in various departments. It holds a general meeting once a month, and is divided into four groups, each of which has its own stated meetings. Papers describing original work, and those of a more popular nature, are presented from time to time.

THE PHILOLOGICAL CLUB.—The Philological Club meets on the first Thursday evening of each month except January, during the academic year, for the presentation and discussion of original papers on philological and literary subjects.

THE UNIVERSITY GUILD.—The University Guild has for its object the building up of an art collection, and the promotion of a general interest, among the faculty, students, and friends of the University, in the study of the fine arts. The Guild occupies rooms in Mt. Vernon House, and holds monthly meetings from October till May. As rapidly as funds may permit, casts and photographs of celebrated works of art will be added to the collection already begun.

The course in the history of Italian painting, given in 1900-1901, is open to members of the Guild.

PHI KAPPA PHI.—The Phi Kappa Phi is an honorary society. At the end of the junior year the five members of the class having the highest standing are elected members, and at the end of the fall term of the senior year the five next highest are added.

THE 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.

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 OF MAINE STUDIES.—These are occasional publications containing reports of investigations or researches made by university officers or alumni.

THE UNIVERSITY CIRCULARS.—These are occasional pamphlets, issued for special purposes. Those now ready for distribution relate to: the Courses in Agriculture; the Courses in Pharmacy; the School of Law; the Courses in Engineering; Student Expenses.

THE MAINE BULLETIN.—This is a small publication issued quarterly by the University, to give information to the alumni.

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 CAMPUS.—This is a journal published semi-monthly during the university year by an association of the students.

THE PRISM.—This is an illustrated annual, published by the junior class.

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, an artillery company, band, and signal corps, officered by cadets selected for character, soldierly bearing, and military efficiency. The corps is instructed and disciplined in accordance with rules established 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 the cuffs; light blue cloth trousers for cold weather, and white duck trousers for hot weather; blue cap with gold wreath ornament. 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.

Service in the military department is optional for members of the senior and junior classes that have not received appointments as officers.

PUBLIC WORSHIP

Religious services of a simple character are held in the chapel every day except Saturday and Sunday. All undergraduate students are required to be present. Students receive a cordial welcome at all services in the churches of the village. Voluntary religious services, under the direction of the Young Men's Christian Association, are held weekly.

FIELD DAY

One day in each year 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 apparatus, 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, leave of absence, attendance upon chapel, penalties, examinations, and athletics, are printed in a small pamphlet, which may be obtained from the secretary.

By these regulations, the quota of regular studies for each student is, for a minimum, fifteen 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; the examinations at the beginning of the fall term include studies of the whole year. 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.

Each 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 awarded, 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, or both, 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.

DEGREES

The degree of Bachelor of Arts (B. A.) is conferred upon students that complete the Classical Course.

The degree of Bachelor of Philosophy (B. Ph.) is conferred upon students that complete the Latin-Scientific Course.

The degree of Bachelor of Science (B. S.) is conferred upon students that complete the Scientific, Chemical, Preparatory Medical, Agricultural, Civil Engineering, Mechanical Engineering, Electrical Engineering, or Pharmacy Course. The diploma indicates which course has been completed.

The degree of Pharmaceutical Chemist (Ph. C.) is conferred upon students that complete the Short Pharmacy Course.

The degree of Bachelor of Laws (LL. B.) is conferred upon students that complete the Law Course.

ADVANCED DEGREES

For receiving an advanced degree the required preparation must include the attainment of the proper first degree.

The Master's degrees, viz., Master of Arts (M. A.), Master of Philosophy (M. Ph.), Master of Science (M. S.), and Master of Laws (LL. M.), are conferred upon holders of the corresponding Bachelor's degrees under either of the following conditions:

(1) One year's work in residence, including examinations on a prescribed course of study, and the presentation of a satisfactory thesis. The course for each candidate must be approved by the committee on advanced degrees not later than the first week in October. A registration fee of \$10.00 is charged.

(2) Two years' work in absence, with examinations at the University, the other conditions as in (1).

The professional degrees of Civil Engineer (C. E.), Mechanical Engineer (M. E.), and Electrical Engineer (E. E.), may be conferred upon graduates of the Civil Engineering, Mechanical Engineering, and Electrical Engineering Courses respectively on the presentation of a satisfactory thesis after at least three years of professional work subsequent to graduation.

STUDENT EXPENSES

Many students go through college with an annual expenditure of 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 Oak Hall, 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 EXPENSES

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,	<u>\$200 00</u>

The tuition charge is \$15.00 a term, or \$30.00 a year, and all students are subject to this charge except those in the short winter courses in agriculture, for which no tuition charge is made. Residents of Maine who need assistance and maintain a good record may obtain, from the University, loans to cover the tuition charge. The regulations in regard to these loans are stated in the article on loans.

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 of public rooms, and miscellaneous expenses.

The cost of text-books will average about \$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 may be decreased by buying second-hand books and selling them after using them.

Students in the laboratories and shops pay a charge to cover cost of materials and maintenance. These charges are as follows:—botany, per term, \$1.00; chemistry, per term, about \$3.00; bacteriology, per course, \$3.00; physics, per course, \$2.00 to \$4.00; pharmacy, per term, about \$3.50; mineralogy, \$2.00; biology, 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 traveling expenses incurred in visiting engineering works will be nearly equivalent to the laboratory expenses of other courses.

The largest item of expense is for board. At the Commons, the university boarding house, each student pays his share of the cost, varying from \$2.75 to \$3.00 a week. Board may be obtained in clubs or private families at prices ranging from \$2.50 to \$3.25 a week.

Rooms in Oak Hall, 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 upon 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 will be graduated who is in debt to the treasury.

A circular containing a fuller statement in regard to expenses, and treating of the opportunities for self help, may be obtained upon application.

LOANS

TUITION LOANS

Residents of Maine who need assistance and maintain a satisfactory record 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 but personal notes bearing interest at the prevailing rate should be required. 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.

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 JUNIOR EXHIBITION PRIZE 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 SOPHOMORE DECLAMATION PRIZE, 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., a graduate of the University in the class of 1875, 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, a graduate of the University in the class of 1876, 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 the Hon. 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 PHARMACY PRIZE will be awarded to that student in the Pharmacy Department who shall attain the highest standing in chemistry in the last year of his course.

THE AMERICAN SCHOOL IN ROME

Graduates of this University, which is one of the institutions co-operating with the American School of Classical Studies in Rome, are entitled to free tuition in that school. The school awards annually to Bachelors of Arts, chiefly on the basis of competitive examination, two fellowships in Roman Classical Archæology, each with a stipend of \$600.00, and one in Christian Archæology, with a stipend of \$500.00.

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 in other equivalent studies. Certificates will

be accepted for the preparatory work, but not for any part of the college work, unless done in a 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 careful work in mathematics. A good preparation in algebra and geometry is most important for those who expect to enter engineering courses. The schools should give a part of the work in algebra and geometry, or a review of these subjects, during the last year.

Students preparing for the Classical or Latin-Scientific courses should devote special attention to Latin composition, Roman history, and constant practice in pronouncing Latin according to the Roman method.

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.

ADMISSION TO THE SCHOOL OF LAW

Graduates of a college, or of a preparatory school of good standing, will be admitted without examination. Other applicants must give satisfactory evidence of the necessary qualifications. These are fixed in each case on a consideration of its merits.

Students from other law schools of good standing will be admitted to the appropriate classes in this school upon certificate. Students from law offices are admitted to advanced standing after passing a satisfactory examination upon the earlier sub-

jects of the course. Members of the bar of any State are admitted to the senior class without examination.

Special students, not candidates for a degree, are admitted without examination.

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 expence 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.

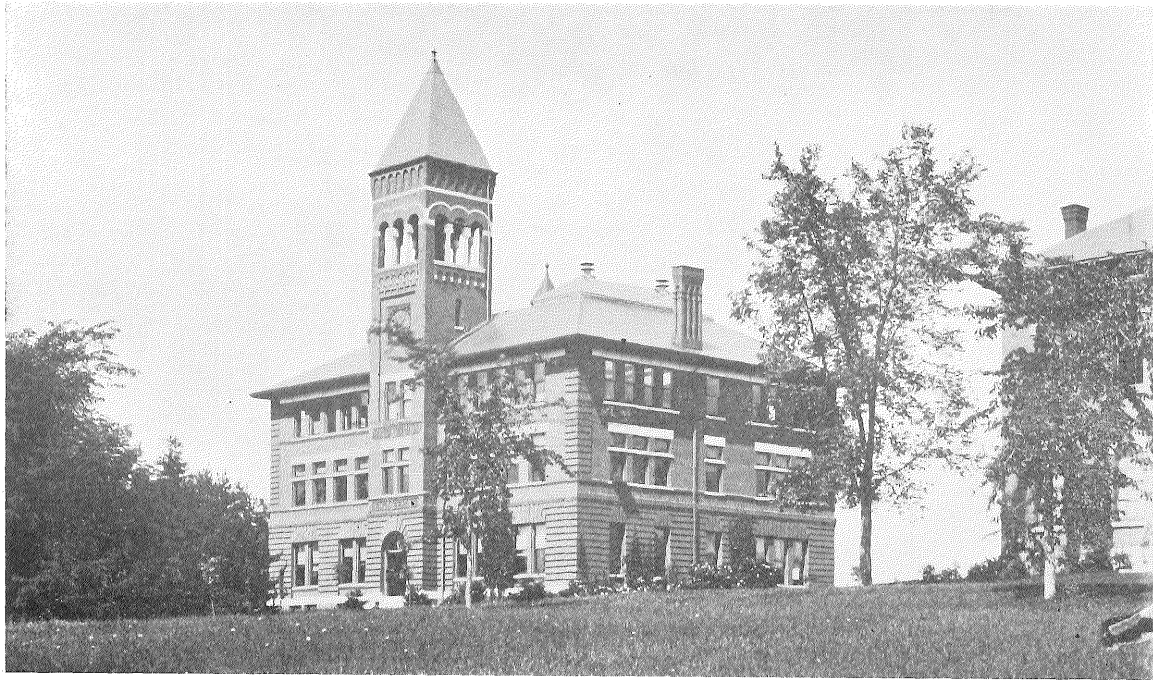
Candidates for the CLASSICAL COURSE are examined on—*Language*, English, Latin, Greek, and either French or German; *History*, Roman, Greek; *Mathematics*, Plane Geometry, Algebra.

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 one year of a foreign language, either ancient or modern; *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



WINGATE HALL.

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 any 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 either 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, Latin, or Greek.

In consideration of the recent addition of one year of a foreign language, and of solid geometry, to the requirements, students who are not able to offer these subjects, but are otherwise prepared, will be admitted without them, and allowed to make them up after admission. This privilege will be withdrawn after 1902.

ENTRANCE REQUIREMENTS

The stars indicate the studies required.

For requirements of the School of Law see the article on School of Law, page 118

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

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 41. *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.

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 1901 and 1902 this part of the examination will be based upon: Shakespeare'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*.

In 1903, 1904, and 1905, it will be based upon: Shakespeare's *Merchant of Venice* and *Julius Cæsar*; the *Sir Roger de Coverley Papers* in the *Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *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 1901 and 1902, this part of the examination will be based upon: Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

In 1903, 1904, and 1905, it will be based upon: Shakespeare's *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and on 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 moderately difficult French prose.

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

LATIN.—The grammar, including prosody; *Cæsar's Gallic War*, books I-IV; Cicero's four orations against *Catiline*, and those for *Archias* and for the *Manilian Law*; *Vergil's Eclogues* and the *Æneid*, books I-VI; the sight translation of Latin passages of moderate difficulty; the translation into Latin of simple English sentences, and of 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-IV; *Homer's Iliad*, books I-III; 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

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*, or from *Myers's Rome: Its Rise and Fall, to the death of Marcus Aurelius*.

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

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

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

MATHEMATICS

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

SOLID GEOMETRY.—Books VI-IX of Wells's, or books VI-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 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 prepared, 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, the theory of exponents, quadratic equations, ratio and proportion, arithmetical and geometrical progression, the binomial theorem. Candidates for special courses in agriculture or for the short course in pharmacy will be examined on no topics beyond simple equations of the first degree. A satisfactory preparation may be obtained from Newcomb's, Wells's Academic, or Wentworth's School Algebra.

SCIENCE

BOTANY.—An elementary course which will bring the student into contact with plants. Gray's Lessons in Botany, 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.

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.

ADMISSION BY CERTIFICATE

Any preparatory school whose course of instruction covers in a satisfactory manner the requirements for admission may be placed upon 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.

Certificates for admission to the freshman class are accepted from graduates of approved schools, but will not be accepted from non-graduates except in extraordinary cases, and then only provided the candidate is expressly recommended for admission by the principal of the school from which he comes. Certificates must be made out on blanks furnished by the University.

APPROVED SCHOOLS	Principal
Athol (Mass.) High School,	F. C. Avery.
Bangor High School,	Henry K. White, M. A.
Bar Harbor High School,	Prescott Keyes, Jr., B. C. E.
Bath High School,	H. E. Cole, M. A.
Belfast High School,	W. R. Howard, B. S.
Berwick Academy, South Berwick,	F. Stanley Stebbins, B. A.
Biddeford High School,	Harry H. Burnham, M. A.
Bowdoinham High School,	R. F. Springer.
Boynton High School, Eastport,	John B. Merrill, M. A.
Brewer High School,	Harlan M. Bisbee, B. A.
Bridge Academy, Dresden Mills,	Leslie A. Bailey, M. A.
Bridgton Academy, North Bridgton,	C. C. Spratt, B. A.
Bridgton High School,	Charles Stone, B. A.
Bristol Academy, Taunton, Mass.,	Alfred B. Maggs, M. A.
Brunswick High School,	Charles Fish, M. A.

Calais High School,	Herbert S. Philbrick, M. A.
Caribou High School,	W. P. Hamilton, B. A.
Cherryfield Academy,	Benjamin Coffin, B. A.
Coburn Classical Institute, Waterville,	F. W. Johnson, M. A.
Cony High School, Augusta,	C. F. Cook, B. A.
Cornish High School,	Stephen Rounds, B. A.
Corinna Union Academy,	W. Francis Miner, B. A.
Danforth High School,	Varney A. Putnam.
Deering High School,	William M. Marvin, B. A.
Dexter High School,	W. S. Brown, B. A.
East Corinth Academy,	Francis E. Russell, M. A.
East Maine Conference Seminary, Bucksport,	Simpson A. Bender, B. A., B. D.
Edward Little High School, Auburn,	J. F. Moody, M. A.
Ellsworth High School,	W. H. Dresser, B. A.
English High School, Lynn, Mass.,	Charles S. Jackson, B. S.
English High School, Lynn, Mass.,	Charles S. Jackson, B. S.
Farmington High School,	Charles M. Pennell, B. A.
Fort Fairfield High School,	F. C. Mitchell, B. S.
Foxcroft Academy,	Lyman K. Lee, B. A.
Framingham Academy and High School, Framingham Center, Mass.,	Alfred C. Fay, B. A.
Freeport High School,	Will O. Hersey, B. A.
Gardiner High School,	William L. Powers, M. A.
George Stevens Bluehill Academy, Bluehill,	Albert D. True, B. A.
Gorham High School,	Leon O. Glover.
Gould's Academy, Bethel,	F. E. Hanscom, M. A.
Greeley Institute, Cumberland Center,	Everett Peacock, B. A.
Guilford High School,	George W. Snow, M. A.
Hallowell High School,	C. W. Stowell.
Hampden Academy,	Leonard Ford, B. S.

Hebron Academy,	W. E. Sargent, M. A.
Higgins Classical Institute, Charleston,	H. Warren Foss, B. A.
Hyde Park (Mass.) High School,	Merle S. Getchell, M. A.
Island Falls High School,	San Lorenzo Merriman, B. A.
Leavitt Institute, Turner Center,	Leland A. Ross, B. A.
Lewiston High School,	G. H. Libby, B. A.
Limerick Academy,	William A. Hawthorne, B. A.
Limington Academy,	Charles L. Orton, B. A.
Lincoln Academy, Newcastle,	George H. Larrabee, M. A.
Lisbon High School,	A. E. Linscott, B. A.
Lisbon Falls High School,	Leander H. Moulton, M. A.
Lubec High School,	Ascor C. Merrill, B. A.
Machias High School,	D. Lyman Wormwood, B. A.
Madison High School,	Edward M. Tucker, B. A.
Maine Central Institute, Pittsfield,	F. U. Landman, B. A.
Maine Wesleyan Seminary and Female College, Kent's Hill,	Henry E. Trefethen, M. A.
Mechanic Falls High School,	Alton C. Wheeler, B. A.
Monmouth Academy,	A. L. Dennison, B. A.
Monson Academy,	W. S. Knowlton, M. A.
North Brookfield (Mass.) High School,	C. N. Perkins, M. A.
North Yarmouth Academy, Yarmouth,	Rev. B. P. Snow, M. A.
Norway High School,	Albert M. Rollins, B. A.
Norwell (Mass.) High School,	A. G. Catheron, B. A.
Oakland High School,	F. L. Tapley.
Oldtown High School,	Harry T. Watkins, B. A.
Orono High School,	Harry S. Rowe, B. A.
Orange (Mass.) High School,	Charles L. Simmons.
Palmer (Mass.) High School,	Alfred C. Thompson, B. A.
Parsonsfield Seminary and Piper High School,	Elden D. Pratt, M. A.
Patten Academy,	H. N. Gardner, B. A.

Pennell Institute, Gray,	C. W. Pierce, M. A.
Phillips High School,	Frank F. Purinton, M. A.
Phillips Limerick Academy, Limerick,	William Harthorne.
Portland High School,	Albro E. Chase, B. A.
Plymouth (Mass.) High School,	Agnes W. Lindsay.
Presque Isle High School,	J. E. Roberts, B. A.
Richmond High School.	E. C. Megguire, M. A.
Ricker Classical Institute, Houlton,	Arthur M. Thomas, M. A.
Rockland High School,	L. E. Moulton, B. A.
Rumford Falls High School,	Charles W. Cary.
Skowhegan High School and Bloomfield Academy, Skowhegan,	William L. Bonney, M. A.
South Paris High School,	Hal. R. Eaton, B. A.
South Portland High School,	Ralph A. Parker, B. A.
Thomaston High School,	Albert S. Cole, B. A.
Thornton Academy, Saco,	Edwin P. Sampson, M. A.
Topsham High School,	John A. Cone, B. A.
Warren High School,	Parker T. Pearson, B. A.
Washington Academy, E. Machias, A.	Sherman Harriman, B. A.
Waterville High School,	John E. Nelson, B. A.
Westbrook High School,	Fred W. Freeman, M. A.
Westbrook Seminary, Deering,	O. H. Perry, B. A.
Whitefield (N. H.) High School,	William B. Noyes, B. A.
Wilton Academy,	Drew T. Harthorn, M. A.
Yarmouth High School,	Herbert M. Moore, B. A.

DEPARTMENTS OF INSTRUCTION

ENGLISH

PROFESSOR ESTABROOKE; MR. UPTON.

Eh 1. DECLAMATIONS.—In the freshman year six declamations are required—three in the fall, and three in the spring. In the sophomore and junior years, five are required each year—three in the fall, and two in the spring. PROFESSOR ESTABROOKE; MR. UPTON.

Eh 2. THEMES.—In the sophomore year five themes, historical in subject, and each containing from 1,000 to 1,200 words, are required. In the junior year five themes are required, and in the senior year, two themes or debates. PROFESSOR ESTABROOKE; MR. UPTON.

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

The text-book is Genung's *Outlines of Rhetoric*. *Five hours a fortnight*. Fall term. PROFESSOR ESTABROOKE; MR. UPTON.

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 writing.

The text-book is A. S. Hill's *Principles of Rhetoric*. *Five hours a fortnight*. Spring term. PROFESSOR ESTABROOKE; MR. UPTON.

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.* Spring term. PROFESSOR ESTABROOKE.

Eh 8. ENGLISH LITERATURE.—The text-book, Pancoast's Introduction to English Literature, is supplemented by frequent lectures, and by study in the library. A few masterpieces are studied in detail. Attention is given to historical and social conditions, and the students are required to prepare essays upon the characters and times studied. *Five hours a fortnight.* Fall term. PROFESSOR ESTABROOKE.

Eh 9. ENGLISH LITERATURE.—A continuation of course 8. *Five hours a fortnight.* Spring term. PROFESSOR 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.* Fall term. PROFESSOR 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.* Spring term. PROFESSOR ESTABROOKE.

Eh 12. ENGLISH LITERATURE.—Readings from English fiction. In this course selections from English novelists (chiefly later ones) are read critically, in order to determine the characteristic qualities of each. At least one entire work of a selected author is carefully studied. *Five hours a fortnight.* Fall term. PROFESSOR ESTABROOKE.

Eh 13. ENGLISH LITERATURE.—A continuation of course 12. *Five hours a fortnight.* Spring term. PROFESSOR ESTABROOKE.

MODERN LANGUAGES

ASSISTANT PROFESSOR LEWIS; MR. GOODELL; MR. UPTON.

MI 19. FRENCH.—An elementary course covering the essentials of the grammar, and offering easy prose reading.

The text-books are: Grandgent, Short French Grammar; Super, French Reader; Goodell, L'Enfant Espion and Other Stories. *Two hours a week.* Fall term. MR. GOODELL.

MI 20. FRENCH.—A continuation of course 19. *Two hours a week.* Spring term. MR. GOODELL.

MI 1. FRENCH.—Elementary course. The text-books are: Grandgent, Short French Grammar; Super, French Reader; Goodell, L'Enfant Espion and Other Stories; Mérimée, Colomba; outside reading *Four hours a week.* Fall term. MR. GOODELL.

MI 2. FRENCH.—A continuation of course 1. *Four hours a week.* Spring term. MR. GOODELL.

MI 21. FRENCH.—For students who offer French at entrance. The text-books are: Daudet, Contes (Cameron); Augier, Le Gendre de Monsieur Poirier; Coppée, Contes; Rostand, Cyrano de Bergerac; Béranger, Chansons Françaises; Composition; outside reading. *Two hours a week.* Fall term. MR. GOODELL.

MI 22. FRENCH.—A continuation of course 21. *Two hours a week.* Spring term. MR. GOODELL.

MI 3. FRENCH.—For those who have taken one year of college French. Authors of the nineteenth century. The text-books are: Crane, Le Romantisme Français; Hugo, Hernani; Kuhns, Alfred de Musset; Gautier, Jettatura; Dumas fils, La Question d'Argent; Fasnacht, French Composition; dictation; outside reading. *Five hours a fortnight.* Fall term. MR. GOODELL.

MI 4. FRENCH.—A continuation of course 3. *Five hours a fortnight.* Spring term. MR. GOODELL.

MI 15. FRENCH LITERATURE.—Authors of the sixteenth and seventeenth centuries, especially Corneille, Racine and Molière. Lectures, outside reading and dictation. Elective for those who have completed course 4. *Five hours a fortnight.* Given in the fall term of even years. MR. GOODELL.

MI 16. FRENCH LITERATURE.—A continuation of course 15. *Five hours a fortnight.* Given in the spring term of odd years. MR. GOODELL.

MI 17. FRENCH LITERATURE.—Authors of the eighteenth and nineteenth centuries. Lectures, outside reading, and dictation. Elective for those who have completed course 4. *Five hours a fortnight*. Given in the fall term of odd years. MR. GOODELL.

MI 18. FRENCH LITERATURE.—A continuation of course 17. *Five hours a fortnight*. Given in the spring term of even years. MR. GOODELL.

MI 9. SPANISH.—An elementary course, elective for those who have completed course 2.

The text-books are: Edgren, Spanish Grammar; Matzke, Spanish Reader; Alarcón, El Capitán Veneno. *Five hours a fortnight*. Given in the fall term of even years. MR. GOODELL.

MI 10. SPANISH.—A continuation of course 9. *Five hours a fortnight*. Given in spring term of odd years. MR. GOODELL.

MI 11. ITALIAN.—An elementary course, elective for those who have completed course 2. Modern prose writers: Grammar, composition. *Five hours a fortnight*. Given in fall term of odd years. MR. GOODELL.

MI 12. ITALIAN.—A continuation of course 11. *Five hours a fortnight*. Given in spring term of even years. MR. GOODELL.

MI 5. GERMAN.—An introductory course, covering the essentials of the grammar, and presenting moderately easy prose reading.

The text-books are: Joynes-Meissner German Grammar; Lewis, Alternative Exercises; Huss, German Reader; Storm, Immensee; Heyse, L'Arrabiata; Hillern, Höher als die Kirche, Riehl, Burg Neideck. *Four hours a week*. Fall term. PROFESSOR LEWIS; MR. UPTON.

MI 6. GERMAN.—A continuation of course 5. *Four hours a week*. Spring term. PROFESSOR LEWIS; MR. UPTON.

MI 27. GERMAN.—An intermediate course for students who offer German at entrance. The text-books are: Lessing, Minna von Barnhelm; Schiller, Wilhelm Tell; Goethe, Sesenheim, Hermann und Dorothea; Stein's German Exercises. *Four hours a week*. Fall term. PROFESSOR LEWIS.

Ml 28. GERMAN.—A continuation of course 27. *Four hours a week.* Spring term. PROFESSOR LEWIS.

Ml 25. GERMAN.—An intermediate course for those who have taken one year of college German.

The text-books are: Baumbach, der Schwiegersohn; Lessing, Minna von Barnhelm; Schiller, Jungfrau von Orleans; Goethe, Hermann und Dorothea; Brandt and Day's Scientific Readings. *Two hours a week.* Fall term. PROFESSOR LEWIS; MR. UPTON.

Ml 26. GERMAN.—A continuation of course 25. *Two hours a week.* Spring term. PROFESSOR LEWIS; MR. UPTON.

Ml 7. GERMAN.—Schiller, Wallenstein; Goethe, Goetz von Berlichingen, Dichtung und Wahrheit; Lessing, Emilia Galotti; Helmholtz, Goethe's Naturwissenschaftliche Arbeiten; Harris, German Composition. *Five hours a fortnight.* Fall term. PROFESSOR LEWIS.

Ml 8. GERMAN.—A continuation of course 7. *Five hours a fortnight.* Spring term. PROFESSOR LEWIS.

Ml 29. GERMAN.—Lessing, Nathan der Weise; Goethe, Faust, Part I. *Five hours a fortnight.* Fall term. PROFESSOR LEWIS.

Ml 30. GERMAN.—Kluge, Deutsche National Litteratur, with lectures, recitations and collateral reading. *Five hours a fortnight.* Spring term. PROFESSOR LEWIS.

LATIN

PROFESSOR HARRINGTON.

Lt 1. LIVY AND CICERO.—Livy, History of Rome, Books XXI and XXII; Cicero, De Senectute; Latin composition based upon the authors read. *Four hours a week.* Fall term.

Lt 2. HORACE.—Selections from the Satires, Epistles, Epodes and Odes; classical mythology. *Four hours a week.* Spring term.

Lt 3. PLAUTUS AND TERENCE.—The *Captivi*, *Trinummus*, or *Menæchmi* of Plautus; the *Andria*, *Adelphæ*, or *Phormio* of Terence; lectures on the development of Roman comedy. *Five hours a fortnight*. Fall term.

Lt 4. CICERO AND TACITUS.—Selected letters of Cicero; the *Agricola* and *Germania* of Tacitus. *Five hours a fortnight*. Spring term.

Lt 5. PLINY AND TACITUS.—Selected letters of Pliny the younger; readings in the *Annals* of Tacitus; studies in Silver Latinity. *Five hours a fortnight*. Given in the fall term of odd years.

Lt 6. ROMAN LYRIC POETRY.—Selections from Catullus, Horace, and the Latin hymns of the Christian church; original research. *Five hours a fortnight*. Given in the spring term of even years.

Lt 7. THE ROMAN ELEGIAC POETS.—Selections from Catullus, Tibullus, Propertius, and Ovid; original research. *Five hours a fortnight*. Given in the fall term of even years.

Lt 8. THE ROMAN ELEGIAC POETS.—A continuation of course 7. *Five hours a fortnight*. Given in the spring term of odd years.

Lt 9. ROMAN SATIRE.—Selections from Ennius, Lucilius, Varro, Horace, Persius, Juvenal, Petronius; original research. *Five hours a fortnight*. Given in the fall term of odd years.

Lt 10. ROMAN SATIRE.—A continuation of course 9. *Five hours a fortnight*. Given in the spring term of even years.

Lt 11. ROMAN PHILOSOPHY.—Lucretius (selections); Cicero (selections from the *Academica*, *De Officiis*, *Tusculanæ Disputationes*, *De Finibus*, *De Natura Deorum*); Seneca (*De Providentia*, *De Vita Beata*); lectures on the history and development of ancient philosophy; original research. *Five hours a fortnight*. Given in the fall term of even years.

Lt 12. ROMAN PHILOSOPHY.—A continuation of course 11. *Five hours a fortnight.* Given in the spring term of odd years.

Lt 13. ROMAN LITERATURE.—General introduction to the subject; illustrative class-room readings; a choice of one of five courses of collateral reading of Roman authors. *Five hours a fortnight.* Given in the fall term of even years.

Lt. 14. ROMAN LITERATURE.—A continuation of course 13. *Five hours a fortnight.* Given in the spring term of odd years.

Lt 15. ROMAN RHETORIC AND ORATORY.—Quintilian (selections from the *Institutio Oratoria*); Tacitus (*Dialogus de Oratoribus*); Cicero (selections from the *Brutus*, *De Oratore*, *Orator*); a study of sample orations of Cicero, and of some of the fragments of Roman oratory. *Five hours a fortnight.* Given in the fall term of odd years.

Lt 16. ROMAN RHETORIC AND ORATORY.—A continuation of course 15. *Five hours a fortnight.* Given in the spring term of even years.

Lt 17. ROMAN TOPOGRAPHY.—Lectures on the development of the city of Rome and the present condition of its ancient ruins, preceded by a glance at the geography of the Italian peninsula. Illustrated by maps, photographs, and stereopticon views. *One hour a week.* Given in the fall term of even years.

Lt. 18. ROMAN PRIVATE LIFE.—Text-book work, supplemented by collateral reading and lectures upon some of the more important and interesting customs and institutions of Roman every-day life. *One hour a week.* Given in the spring term of odd years.

Lt 19. LATIN WRITING.—Exercises in the translation of English into Latin with special reference to style. *One hour a week.* Given in the fall term of odd years.

Lt. 20. ROMAN EPIGRAPHY.—The principles of the science, and the interpretation of selected inscriptions. *One hour a week.* Given in the spring term of even years.

GREEK

PROFESSOR HUDDILSTON.

Gk 1. XENOPHON.—Hellenica, Books I-IV. Study of syntax, and daily exercises in writing, based upon the text. *Four hours a week.* Fall term.

Gk 2. HOMER.—Odyssey, Books VI-X, and XII. The reading of the remaining books, in English translation, is required; assigned readings on the history of Greek poetry, "the Homeric question," and Homeric antiquities. *Four hours a week.* Spring term.

Gk 3. ATTIC ORATORS.—Some of the shorter orations of Demosthenes; selections from the minor Attic orators; parallel reading on the history of Greek prose literature, and the public economy and social life of Athens. *Five hours a fortnight.* Fall term.

Gk 4. GREEK TRAGEDY.—Euripides's Medea and Sophocles's Oedipus Rex; required reading on the history of the Greek tragic drama. *Five hours a fortnight.* Spring term.

Gk 5. THUCYDIDES.—Book I. Assigned reading in Herodotus, and a comparative study of the three great historians of Greece. *Five hours a fortnight.* Fall term. Open to those who have taken courses 1 and 3.

Gk 6. ARISTOPHANES.—The Clouds and the Knights; lectures and collateral reading on the development of Greek comedy. *Five hours a fortnight.* Spring term. Open to students who have taken courses 2 and 4.

Gk 7. PLATO.—Selected dialogues. Lectures on the history of Greek philosophy with special reference to Plato and Aristotle. *Five hours a fortnight.* Fall term. Open to those who have taken courses 3 and 5.

Gk 8. PINDAR.—The Olympian and Pythian Odes; parallel reading on the history of Greek lyric poetry. *Five hours a fortnight.* Spring term.

Gk 9. GREEK SCULPTURE.—Lectures, illustrated by photographs and lantern slides. This course does not presuppose a knowledge of Greek, and is intended to serve as a general introduction to Greek fine arts. The interdependence of the arts and their relation to the life of the Greeks, as well as their relation to the world's subsequent art, receives considerable attention. *Five hours a fortnight.* Given in the fall term of odd years.

Gk 10. GREEK SCULPTURE.—A continuation of course 9 with a more particular study of Greek architecture. *Five hours a fortnight.* Given in the spring term of even years.

Gk 11. NEW TESTAMENT GREEK.—This course is intended for those who have no acquaintance with ancient languages, and, with course 12, is expected to give considerable facility in reading the narrative portions of the Greek Testament. It neither takes the place of preparatory Greek, nor counts toward a degree in the Classical course. It is open to all students, but to freshmen only on permission by the instructor. *Five hours a fortnight.* Given in the fall term of even years.

Gk 12. NEW TESTAMENT GREEK.—A continuation of course 11. Reading of the Gospels of John and Matthew; syntax. *Five hours a fortnight.* Given in the spring term of odd years.

Gk 13. GREEK PRIVATE LIFE.—Lectures, illustrated with lantern slides and photographs. Assigned reading. *Five hours a fortnight.* Given in the fall term of even years.

Gk 14. GREEK RELIGION.—A study of the chief divinities in ancient Greek religion with special reference to the various types as shown in sculpture and vase-paintings. Lectures and assigned reading. *Five hours a fortnight.* Given in the spring term of odd years.

Gk 15. GREEK PROSE COMPOSITION.—The writing of connected exercises, and advanced study in Greek syntax. Special attention will be given to style, and it is recommended that this course be taken in connection with Gk 3 or Gk 7. *One hour a week.* Fall term.

Gk 16. ITALIAN ART.—The history of Italian painting of the Renaissance with special reference to the masterpieces of the 15th and 16th centuries. Lectures, collateral reading, and recitations. The University has a large and growing collection of photographs, which is used to illustrate this course. *One hour a week.* Given in the fall term of even years.

Gk 17. ITALIAN ART.—A continuation of course 16. *One hour a week.* Given in the spring term of odd years.

PHILOSOPHY

PROFESSOR FERNALD.

Pl 1. PSYCHOLOGY.—Among the topics considered are sensation, structure and functions of the brain, conditions of neural activity, consciousness, attention, conception, discrimination, association, memory, imagination, perception, reasoning, instinct, emotions and sentiments, will as volition, will as choice, and will in relation to character.

The text-book is James's Psychology (Briefer Course.) *Five hours a fortnight.* 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.* Spring term.

Pl 3. HISTORY OF PHILOSOPHY.—The text-book is Weber's History of Philosophy. *Five hours a fortnight.* Fall term of odd years.

Pl 4. PEDAGOGY.—The principles of psychology applied to the art of teaching. The order in which the several powers of the mind become active; their relative activity and development at successive school periods. The principles and methods of teaching; oral instruction and the study of books; the recitation, its

objects and methods; methods of testing, by questions, by topics; examinations; psychical facts applied to moral training. *Five hours a fortnight.* Fall term.

Pl 5. COMPARATIVE PSYCHOLOGY. The psychology of man and the higher animals compared. A study of other minds than ours with reference to sense-experience, instinct and intelligence, association of ideas, memory, perception of relations, the power to reason, and the emotions. *Five hours a fortnight.* Offered in the spring term of even years. Open to juniors and seniors.

Pl 6. PSYCHOLOGY, ADVANCED COURSE.—Besides special topics in general psychology, this course is designed to include a discussion of such phenomena as sleep and dreams, the hypnotic state, thought transference, illusions and hallucinations. *Five hours a fortnight.* Offered in the spring term of odd years. Open to juniors and seniors.

Pl 7. 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, Adams's European History, is supplemented by lectures and topical studies. *Five hours a fortnight.* Given in the fall term of even years.

CIVICS AND HISTORY

PROFESSOR ROGERS.

Cv 1. GENERAL HISTORY.—The text-book is Schwill's History of Modern Europe. *Five hours a fortnight.* Fall term.

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

Cv 3. AMERICAN HISTORY.—Lectures, supplemented by topical investigation and study.

The text-book is Burgess's Middle Period. *Two hours a week.* Fall term.

Cv 13. POLITICAL ECONOMY.—Instruction is given by lectures. Topical readings and investigations are required. *Five hours a fortnight.* Fall term.

Cv 14. POLITICAL ECONOMY.—A continuation of course 13. *Five hours a fortnight.* Spring term.

Cv 15. 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 fortnight.* Fall term.

Cv 16. CONSTITUTIONAL LAW AND HISTORY.—A continuation of course 15. *Five hours a fortnight.* Spring term.

Cv 11. INTERNATIONAL LAW.—The text-book is Lawrence's *International law.* *Five hours a fortnight.* Given 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.* Spring term.

LAW

Lw 1. CONTRACTS.—The text-book is Huffcut and Woodruff's *Cases on Contract.* *Four hours a week.* Fall term. MR. PRICE.

Lw 2. CONTRACTS.—A continuation of course 1. *Four hours a week.* Winter term. MR. PRICE.

Lw 3. TORTS.—The text-book is Ames and Smith's *Cases on Torts.* *Four hours a week.* Fall term. PROFESSOR WALZ.

- Lw 4. TORTS.—A continuation of course 3.
Three hours a week. Winter term. PROFESSOR WALZ.
- Lw 5. TORTS.—A continuation of course 4.
Two hours a week. Spring term. PROFESSOR WALZ.
- Lw 6. HISTORY AND ELEMENTS OF LAW.—Lectures.
One hour a week. Fall term. PROFESSOR ROGERS.
- Lw 7. REAL PROPERTY.—The text-book is Tiedeman on Real Property.
Four hours a week. Fall term. PROFESSOR GARDNER.
- Lw 8. REAL PROPERTY.—A continuation of course 7.
Three hours a week. Winter term. PROFESSOR GARDNER.
- Lw 9. AGENCY.—The text-book is Huffcut's Cases on Agency.
Three hours a week. Spring term. PROFESSOR WALZ.
- Lw 10. BANKRUPTCY.—Lectures.
One hour a week. Winter term. MR. HAMLIN.
- Lw 11. BANKRUPTCY.—A continuation of course 10.
One hour a week. Spring term. MR. HAMLIN.
- Lw 12. CRIMINAL LAW.—The text-book is Beale's Cases on Criminal Law.
Four hours a week. Spring term. MR. PRICE.
- Lw 13. QUASI CONTRACTS.—The text-book not selected.
Two hours a week. Spring term. PROFESSOR GARDNER.
- Lw 14. COMMON LAW PLEADING.—Lectures.
Two hours a week. Winter term. MR. MARTIN.
- Lw 15. COMMON LAW PLEADING.—A continuation of course 14.
One hour a week. Spring term. MR. MARTIN.
- Lw 16. EQUITY.—The text-books are Bispham on Equity Jurisprudence, and Shepard's Illustrative Cases in Equity. *Four hours a week.* Fall term. PROFESSOR WALZ.

Lw 17. EQUITY JURISPRUDENCE.—A continuation of course 15. *Four hours a week.* Winter term. PROFESSOR WALZ.

Lw 18. EVIDENCE.—The text-book is Thayer's Cases on Evidence. *Four hours a week.* Fall term. PROFESSOR GARDNER.

Lw 19. EVIDENCE.—A continuation of course 18. *Four hours a week.* Winter term. PROFESSOR GARDNER.

Lw 20. PRIVATE CORPORATIONS.—The text-book is Elliott on Private Corporations. *Two hours a week.* Fall term. PROFESSOR WALZ.

Lw 21. PRIVATE CORPORATIONS.—A continuation of course 20. *Two hours a week.* Winter term. PROFESSOR WALZ.

Lw 22. DOMESTIC RELATIONS.—The text-book is Elwell's Leading Cases. *Three hours a week.* Fall term. MR. PRICE.

Lw 23. WILLS AND ADMINISTRATION.—The text-book is Chaplin's Cases on Wills. *Two hours a week.* Spring term. PROFESSOR GARDNER.

Lw 24. EQUITY PLEADING.—Lectures. *Two hours a week.* Spring term. MR. CLARK.

Lw 25. SALES.—The text-book is Burdick's Cases on Sales. *Four hours a week.* Fall term. PROFESSOR GARDNER.

Lw 26. BAILMENTS.—The text-book is McClain's Cases on Carriers. *One hour a week.* Fall term. MR. PRICE.

Lw 27. BAILMENTS.—A continuation of course 26. *Three hours a week.* Winter term. MR. PRICE.

Lw 28. DAMAGES.—The text-book is Beale's Cases on Damages. *Three hours a week.* Winter term. PROFESSOR WALZ.

Lw 29. COMMERCIAL PAPER.—The text-book is Huffcut's Cases on Negotiable Instruments. *Two hours a week.* Winter term. PROFESSOR GARDNER.

Lw 30. COMMERCIAL PAPER.—A continuation of course 29. *Three hours a week.* Spring term. PROFESSOR GARDNER.

Lw 31. JURISDICTION OF FEDERAL COURTS.—Lectures. *One hour a week.* Winter term. PROFESSOR GARDNER.

Lw 32. INSURANCE.—The text-book is Richards on Insurance. *Three hours a week.* Spring term. MR. PRICE.

Lw 33. CONSTRUCTION OF STATUTES.—Lectures. *Two hours a week.* Spring term. PROFESSOR GARDNER.

Lw 34. WILLS.—The text-book is Chaplin on Wills. *Two hours a week.* Spring term. PROFESSOR GARDNER.

Lw 35. GENERAL REVIEW.—The text-book is Gardner's Review in Law and Equity. *Two hours a week.* Spring term. PROFESSOR GARDNER.

Lw 36. ROMAN LAW.—Lectures. *One hour a week.* Spring term. JUDGE EMERY.

Lw 37. EVIDENCE.—*Time not fixed.* JUDGE WISWELL.

Lw 38. MEDICAL JURISPRUDENCE. Lectures. *Two hours a fortnight.* Winter term. MR. SOUTHARD.

MATHEMATICS AND ASTRONOMY

PROFESSOR HART; MR. SIFF; MR. PACKARD.

Ms 2. ALGEBRA.—Review of quadratic equations, the binomial theorem, ratio and proportion, and the progressions; indeterminate equations; logarithms.

The text-book is Wells' College Algebra. *Two hours a week.* Fall term. MR. PACKARD; MR. SIFF.

Ms 4. PLANE TRIGONOMETRY.—The text-book is Phillips and Strong's Trigonometry. *Three hours a week.* Fall term. PROFESSOR HART; MR. PACKARD.

Ms 1. SOLID GEOMETRY.—Solid and spherical geometry, including the mensuration of solids, and original demonstrations.

The text-book is Wells' Solid Geometry. *Two hours a week.* Spring term. MR. SIFF; MR. PACKARD.

Ms 3. ALGEBRA.—Convergence and divergence of series; undetermined coefficients; partial fractions; exponential and logarithmic series; permutations and combinations; probability; the theory of equations.

The text-book is Wells' College Algebra. *Three hours a week.* Spring term. MR. PACKARD; MR. SIFF.

Ms 19. SPHERICAL TRIGONOMETRY.—A continuation of course 4, with additional problems and applications to spherical astronomy. *Two hours a week.* Spring term. MR. PACKARD.

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

The text-book is Wentworth's Analytic Geometry. *Five hours a fortnight.* Spring term. MR. SIFF.

Ms 6. ANALYTICAL 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 analytical geometry.

The text-book is Nichols's Analytic Geometry. *Five hours a week.* Fall term. MR. SIFF.

Ms 7. CALCULUS.—Differentiation; integration by fundamental formulas; definite integrals.

The text-book is Hall's Differential and Integral Calculus. *Five hours a week.* Spring term. PROFESSOR HART; MR. SIFF; MR. PACKARD.

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

The text-book is Hall's Differential and Integral Calculus. *Five hours a fortnight.* Fall term. PROFESSOR 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 work in the observatory.

The text-book is Young's Elements of Astronomy. *Five hours a fortnight.* Spring term. PROFESSOR 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, artificial horizon, portable chronometer, theodolite, and vertical circle. *Five hours a fortnight.* Spring term. PROFESSOR HART.

Ms 11. ADVANCED ALGEBRA.—Determinants and the solution of higher equations. *Five hours a fortnight.* Spring term. MR. SIFF.

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

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

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

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

Ms 16. PRACTICAL ASTRONOMY.—The theory and use of the sextant, universal instrument, transit, and equatorial. *Five hours a fortnight.* Given in the fall term of odd years. PROFESSOR HART.

Ms 17. PRACTICAL ASTRONOMY.—A continuation of course 16. *Five hours a week.* Given in the spring term of even years. PROFESSOR HART.

PHYSICS

PROFESSOR STEVENS; MR. BECK; MR. CASWELL.

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.* Fall term. PROFESSOR STEVENS.

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

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

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

Ps 13. GENERAL PHYSICS.—A continuation of course 12. *Five hours a fortnight.* Spring term. MR. BECK.

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.* Fall term. MR. BECK.

Ps 4. ELEMENTARY PHYSICS.—A continuation of course 3. *Two hours a week.* Spring term. MR. BECK.

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.* Spring term. PROFESSOR STEVENS; MR. BECK; MR. CASWELL.

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

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

Ps 8. ADVANCED PHYSICS.—One course in advanced physics is offered each year. For this year the text-book is Davis's *Meteorology*. *Five hours a fortnight*. Fall term. PROFESSOR STEVENS.

Ps 9. LABORATORY PHYSICS.—General laboratory work in continuation of course 5. † *Five hours a week*. Fall term. PROFESSOR STEVENS.

Ps 10. LABORATORY PHYSICS.—Advanced laboratory work in optics, in continuation of course 9. † *Five hours a week*. Spring term. PROFESSOR STEVENS.

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

Ps 14. ELECTRICAL MEASUREMENT AND TESTING.—Additional work in the subjects offered in course 11, with lectures on the mathematical theory of electrical instruments. The charge for this course is \$1.00. *One hour a week*. Fall term. PROFESSOR STEVENS. † *Three hours a week*. Fall term. MR. BECK; MR. CASWELL.

Ps 15. LABORATORY PHYSICS.—A special course, open to students who have completed courses 9, 10, and 11. Some subject is assigned for original investigation, or the work of a published research is repeated. † *Five hours a week*. Fall term. PROFESSOR STEVENS.

Ps 16. LABORATORY PHYSICS.—A continuation of course 15. † *Five hours a week*. Spring term. PROFESSOR STEVENS.

DRAWING

PROFESSOR GROVER; MR. WESTON; MR. COLE.

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

† *Five hours a week.* Fall term. MR. COLE.

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

The text-book is Harris and Hart's *Lessons in Mathematical Drawing*. † *Three hours a week for thirteen weeks.* Fall and spring terms. MR. COLE.

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 Anthony's *Mechanical Drawing*.

† *Five hours a week.* Spring term. MR. COLE.

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

The text-book is Faunce's *Mechanical Drawing*. † *Five hours a week.* Fall term. MR. COLE.

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

† *Twelve hours a week for five weeks.* Spring term. MR. WESTON.

Dr 6. DESCRIPTIVE GEOMETRY.—Elementary problems; tangents, intersection of planes, cylinders, 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.* Fall term. MR. WESTON; MR. COLE.

Dr 7. DESCRIPTIVE GEOMETRY.—A continuation of course 6. *Three hours a fortnight.* Spring term. MR. WESTON; MR. COLE.

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

† *Twelve hours a week for five weeks.* Spring term. MR. WESTON.

CHEMISTRY

PROFESSOR AUBERT; ASSISTANT PROFESSOR RYLAND; MR. HAYES;
MR. MITCHELL.

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

The text-book is Remsen's Inorganic Chemistry. *Five hours a fortnight.* Fall term. PROFESSOR RYLAND.

Ch 2. GENERAL CHEMISTRY.—A continuation of course 1. *Five hours a fortnight.* Spring term. PROFESSOR RYLAND.

Ch 3. LABORATORY CHEMISTRY.—The preparation of the more common elements and inorganic compounds, and the study of their properties.

The text-book is Hillyer's Chemical Experiments. † *Two hours a week.* Fall term. MR. MITCHELL.

Ch 4. LABORATORY CHEMISTRY.—Elementary qualitative analysis.

The text-book is Rogers's Qualitative Analysis. † *Two hours a week.* Spring term. MR. MITCHELL.

Ch 5. INORGANIC CHEMISTRY.—Lectures and recitations, illustrated by specimens.

The text-book is Joannis's Cours elementaire de chimie, Vols. 1 and 2. *Five hours a fortnight.* Fall term. PROFESSOR AUBERT.

Ch 6. INORGANIC CHEMISTRY.—A continuation of course 5. *Five hours a fortnight.* Spring term. PROFESSOR AUBERT.

Ch 7. ORGANIC CHEMISTRY.—The marsh gas series. Lectures and recitations, illustrated by specimens.

The text-book is Remsen's Organic Chemistry. *Five hours a fortnight.* Fall term. PROFESSOR AUBERT.

Ch 8. ORGANIC CHEMISTRY.—The unsaturated compounds and the benzene series.

The text-book is Remsen's Organic Chemistry. *Five hours a fortnight.* Spring term. PROFESSOR AUBERT.

Ch 10. ANALYTIC METHODS.—Discussion of gravimetric and volumetric methods.

The text-books are Appleton's Quantitative Analysis and Clowes and Coleman's Quantitative Analysis. *One hour a week.* Fall term. PROFESSOR AUBERT.

Ch 11. LABORATORY PROCESS.—Laboratory methods and processes used in the arts. *Five hours a fortnight.* Spring term. PROFESSOR AUBERT.

Ch 12. ORGANIC CHEMICALS.—The preparation and purification of typical organic substances.

The text-book is Aubert's Organic and Inorganic Preparations. † *Five hours a week.* Fall term. PROFESSOR AUBERT.

Ch 14. QUALITATIVE ANALYSIS.—The determination and the study of the reactions involved in these processes.

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

Ch 15. QUALITATIVE ANALYSIS.—The examination of mixtures of salts and the determination of their components.

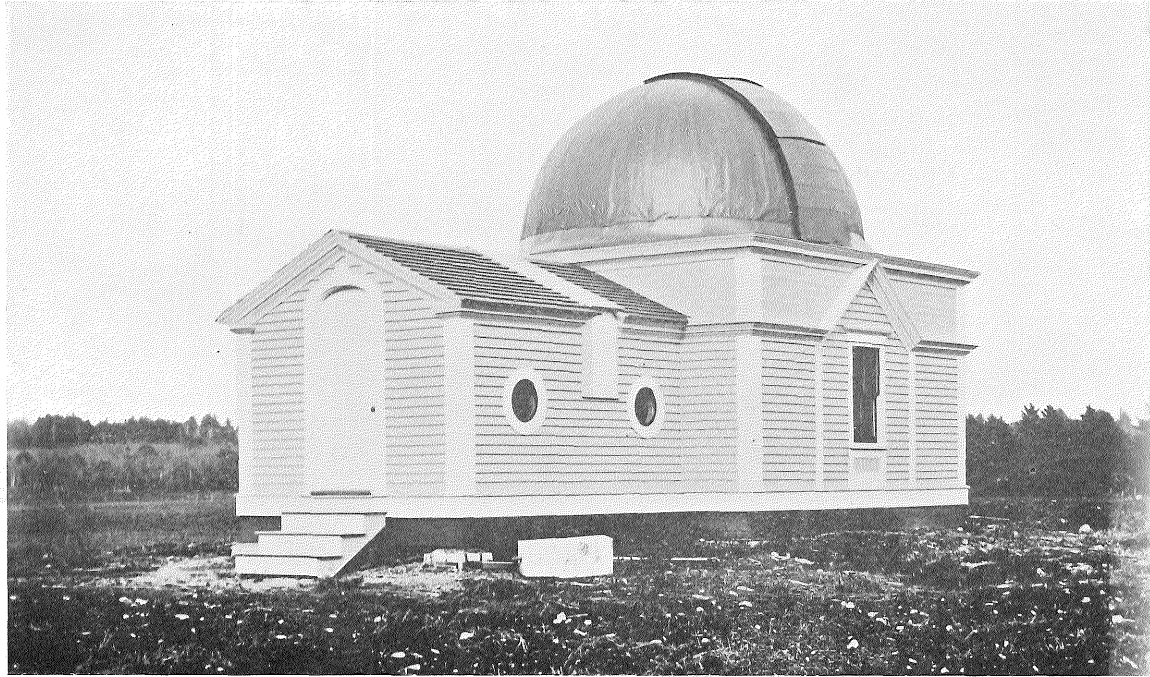
The text-book is Noyes's Qualitative Analysis. *The time varies; it is stated in the tables.* PROFESSOR RYLAND.

Ch 16. QUANTITATIVE ANALYSIS.—Gravimetric determinations.

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

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

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



THE OBSERVATORY.

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

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

Ch 21. TOXICOLOGY AND URINALYSIS.—The determination of the commoner poisons; the analysis of urine.

The text-book is Aubert's Urinalysis and Toxicology. *The time varies; it is stated in the tables.* PROFESSOR AUBERT.

Ch 22. THESIS WORK.—The thesis must embody the results of original work in analysis, or research. † *Fifteen hours a week for eleven weeks.* Spring term. PROFESSOR AUBERT.

Ch 23. ORGANIC CHEMISTRY.—A continuation of course 8. *Five hours a fortnight.* Fall term. PROFESSOR AUBERT.

Ch 24. INDUSTRIAL CHEMISTRY.—General processes of technical chemistry, and selected subjects including the principal manufactured products of special interest. Lectures and recitations. The text-book is Thorp's Outlines of Industrial Chemistry. *Five hours a fortnight.* Spring term. PROFESSOR AUBERT.

Ch 25. TECHNICAL ANALYSIS.—The analysis of ores and industrial products. † *Five hours a week.* Fall term. PROFESSOR AUBERT.

Ch 26. PHYSICAL CHEMICAL METHODS.—The determination of molecular weight by the vapor density, boiling point, and freezing point methods. The use of the refractometer and the polariscope. † *Five hours a week.* Spring term. PROFESSOR AUBERT.

Ch 27. LABORATORY PHYSIOLOGICAL CHEMISTRY.—Qualitative tests of fats, carbohydrates, protein, blood, milk, etc.

The text-book is Novy's Physiological Chemistry. † *Ten hours a week for nine weeks.* Fall term. PROFESSOR JACKMAN.

Ch 13. DESCRIPTIVE MINERALOGY.—The text-book is Moses and Parsons's Elements of Mineralogy. † *Two hours a week.* Spring term. PROFESSOR JACKMAN.

Ch 28. DYEING.—The practical application of dyes to cotton, wool, and silk. † *Fifteen hours a week for two weeks.* Spring term. PROFESSOR AUBERT.

BIOLOGY

PROFESSOR DREW; MR. RICKER.

Bl 1. GENERAL BIOLOGY.—Students study in the laboratory, and where possible in the field, plants and animals selected to illustrate some of the simpler principles of biology. The general truths learned in the laboratory are emphasized and arranged by recitations and lectures. This course serves as a preparation for more advanced work in zoology, botany and physiology, and affords the general student an opportunity to gain some knowledge of the subject. It is to be taken in connection with course 2. *Five hours a fortnight.* Fall term.

Bl 2. LABORATORY BIOLOGY.—To be taken in connection with course 1. † *Five hours a week.* Fall term.

Bl 3. CRYPTOGAMIC BOTANY.—Type forms of flowerless plants are studied in the laboratory and field. Attention is given to their economic importance, structure and life histories. This course is to be taken in connection with course 4. Course 1 is required as a preparation. *Five hours a fortnight.* Given in the fall term of odd years.

Bl 4. LABORATORY BOTANY.—To be taken in connection with course 3. † *Two hours a week.* Given in the fall term of odd years.

Bl 5. ZOOLOGY (Invertebrate animals).—The habits, comparative anatomy and classification of invertebrate animals are

studied in the laboratory, class-room and field. This course is to be taken in connection with course 6. It is not complete in itself, but should be followed by course 7. Course 1 is required as a preparation. *Five hours a fortnight.* Fall term.

BI 6. LABORATORY ZOOLOGY.—To be taken in connection with course 5. † *Five hours a week.* Fall term.

BI 7. ZOOLOGY (Vetebrate animals).—A continuation of course 5. Types of vertebrate animals are studied and their structures compared. It is to be taken in connection with course 8. This course is not complete in itself. It should be preceded by course 5. Course 1 is required as a preparation. *Five hours a fortnight.* Spring term.

BI 8. LABORATORY ZOOLOGY.—To be taken in connection with course 7. † *Five hours a week.* Spring term.

BI 9. PHYSIOLOGY.—A study of the physiological activities of the animal body, with a laboratory basis of dissections, microscopic anatomy, and simple experiments. This course is to be taken in connection with course 10. Course 1 is required as a preparation. *Five hours a fortnight.* Spring term.

BI 10. LABORATORY PHYSIOLOGY.—To be taken in connection with course 9. † *Five hours a week.* Spring term.

BI 11. ENTOMOLOGY.—The classification and structure of insects are studied in the laboratory, and observations on life-histories and economic importance are made in the field.

There are lectures and recitations at intervals during the term. This course is to be taken in connection with course 12. Course 1 is required as a preparation. *Five hours a fortnight.* Given in the fall term of even years.

BI 12. LABORATORY ENTOMOLOGY.—To be taken in connection with course 11. † *Two hours a week.* Given in the fall term of even years.

BI 13. GEOLOGY.—A study of the structure and history of the earth, and the processes by means of which geological changes are brought about. *Five hours a fortnight.* Fall term.

Bl 14. ADVANCED ZOOLOGY OR BOTANY.—Students who desire to continue the study of zoology or botany are supplied with modern apparatus, and instructed in modern methods of research. In general each student electing this work is given a problem and encouraged to devise means for its solution. *The time varies and may continue for one or more terms.*

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*. Fall term. PROFESSOR MERRILL.

Ag 2. BIOLOGICAL CHEMISTRY.—A continuation of course 1. Lectures and recitations in physiological chemistry, including the composition of the animal body, and of food materials; the chemical changes involved in the digestion and assimilation of food; 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*. Spring term. PROFESSOR 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*. Given in the spring term of even years. PROFESSOR 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*. Given in the spring term of odd years. PROFESSOR WOODS.

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

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

The text-book is Jordan's Feeding of Animals. *Five hours a week for seven weeks.* Given in the spring term of odd years. PROFESSOR 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 Wing's Milk and its Products. *Five hours a fortnight for nine weeks.* Given in the spring term of even years. PROFESSOR GOWELL.

Ag 8. STOCK BREEDING.—Lectures on 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.* Given in the spring term of odd years. PROFESSOR GOWELL.

Ag 9. POULTRY INDUSTRY.—Lectures, with practice in handling poultry; judging by a scale of points; breeding; hatching by natural and artificial processes; the use of machinery; caponizing; the construction and arrangement of buildings. *Five hours a week for four weeks.* Given in the spring term of odd years. PROFESSOR GOWELL.

Ag 10. DAIRY PRACTICE.—The treatment and handling of milk and cream; milk testing for fat and other solids; aëration, pasteurization and sterilization; the application of acid tests and ferments to butter and cheese making; operating and caring for

dairy machinery; making, curing and judging butter and cheese; the business management of factories and creameries. Each student is required to provide two suits of clothes made of white drilling. †*Seven hours a week for twelve weeks.* Given in the spring term of even years. PROFESSOR GOWELL.

Ag 11. VETERINARY SCIENCE.—Lectures, demonstrations and clinics, illustrated by models, natural preparations, and living animals. *Five hours a fortnight.* Given in the spring term of odd years. PROFESSOR 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. PROFESSOR RUSSELL.

Ag 13. BACTERIOLOGY.—An elementary laboratory course, including the preparation of culture media and a critical study of the morphological and biological characteristics of a few typical bacteria. †*Ten hours a week for four and a half weeks.* Spring term. PROFESSOR RUSSELL.

Ag 14. ANIMAL HISTOLOGY.—Dissecting and the preparation of the most important tissues and organs. †*Ten hours a week for nine weeks.* Spring term. PROFESSOR RUSSELL.

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

HORTICULTURE

PROFESSOR MUNSON; MR. RICKER.

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

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

Ht 2. POMOLOGY.—The economic importance, method of propagation and culture, and the marketing of fruits; the principles and practice of spraying plants. Lectures. *Five hours a fortnight for nine weeks.* Given in the fall term of even years. PROFESSOR MUNSON.

Ht 3. VEGETABLE GARDENING.—The history and uses of leading garden vegetables, with directions for their culture in the field and under glass. Lectures. *Five hours a fortnight for nine weeks.* Given in the fall term of even years. PROFESSOR 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; 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.* Given in the fall term of odd years. PROFESSOR MUNSON.

Ht 5. LANDSCAPE GARDENING.—The principles of landscape art and their application. *Five hours a fortnight for nine weeks.* Given in the fall term of odd years. PROFESSOR MUNSON.

Ht 6. LABORATORY HORTICULTURE.—Practical work in orchard, garden, and greenhouse, supplementing courses 2 and 3. †*Five hours a week.* Given in the fall term of even years. PROFESSOR MUNSON.

Ht 7. LABORATORY HORTICULTURE.—Practical work in the laboratory, the nursery, and on the campus, supplementing courses 4 and 5. †*Two hours a week.* Given in the fall term of odd years. PROFESSOR 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. PROFESSOR MUNSON.

Ht 9. PLANT BREEDING.—A systematic study of the amelioration of plants by cultivation. Lectures and investigations concerning: the fact and philosophy of variation, the causes of individual differences, the choice and fixation of varieties; the philosophy of the crossing of plants, the limits of crossing, the function of a cross; 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.* Given in the fall term of odd years. PROFESSOR MUNSON.

Ht 10. FORESTRY.—Importance and scope of the subject; meteorological influences; financial considerations; the propagation of trees and the planting of forests; forest management; forest products; forest fires, their prevention and control; enemies and disease. Lectures. *Five hours a fortnight.* Given in the fall term of even years. PROFESSOR MUNSON.

Ht 11. PLANT PATHOLOGY.—A systematic study of the more important diseases of plants. Students in this course must have taken course 8. Lectures and investigations. † *Two hours a week.* Given in the fall term of odd years. PROFESSOR MUNSON.

PHARMACY

PROFESSOR JACKMAN.

Pm 1. PHYSICAL AND OFFICIAL PHARMACY.—The history of pharmacopœias, dispensaries, 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 Caspari's Pharmacy. *Five hours a week.* Fall term.

Pm 2. INORGANIC, ORGANIC AND EXTEMPORANEOUS PHARMACY.—The elements, 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 preparation of these drugs, and animal preparations; extemporaneous pharmacy, the principles of dispensing, store management, etc.

The text-book is Caspari's Pharmacy. *Five hours a week.* 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, and other galenicals; official tests of chemicals, drugs, and preparations, for identity, strength and adulteration; drug assaying.

The text-books are Caspari's Pharmacy and the U. S. Pharmacopœia. †*Twelve hours a week.* Fall term.

Pm 4. PHARMACOPŒIA.—A complete review of the pharmacopœia, with special reference to the chemical and pharmaceutical principles involved in tests and preparations.

The text-books are Caspari's Pharmacy and the U. S. Pharmacopœia. *Five hours a week.* Spring term.

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

The text-book is the U. S. Pharmacopœia. *Five hours a fortnight.* Fall term.

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

The text-book is the U. S. Pharmacopœia. *Four hours a week.* 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.* Fall term.

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

Pm 9. PHARMACY READINGS.—Current pharmacy literature; research and reference readings; abstracting; reports. † *Five hours a week*. Spring term.

Pm 10. LABORATORY PHARMACY.—A continuation of Pm 3. † *Five hours a week*. Spring term.

Pm 11. PRESCRIPTIONS.—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 Ruddiman's *Incompatibilities in Prescriptions*. *Five hours a fortnight*. Spring term.

CIVIL ENGINEERING

PROFESSOR GROVER; MR. WESTON; MR. LOMBARD; MR. GOODWIN.

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*. Spring term. MR. WESTON.

Ce 2. FIELD WORK IN SURVEYING.—The use of the chain, compass, transit, and level. Instruments are adjusted, original surveys made, and old lines retraced. Plats are prepared of the surveys made in the field. † *Four hours a week*. Spring term. MR. WESTON; MR. GOODWIN.

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; the theory of economic location.

The text-book is Allen's *Railroad Curves and Earthwork*. *Five hours a fortnight*. 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*. Fall term. MR. WESTON; MR. GOODWIN.

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

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 principles of dynamics, shearing force and bending moment. *Five hours a week*. Fall term. MR. WESTON.

Ce 7. MECHANICS.—A continuation of course 6. *Five hours a week*. Spring term. MR. WESTON.

Ce 8. SANITARY ENGINEERING.—Drainage of land; plumbing of houses; drainage and sewerage of towns; sewage disposal; water supply and purification; ventilation of houses.

The text-book is Merriman's Sanitary Engineering. *Five hours a fortnight*. Fall term. PROFESSOR GROVER.

Ce 9. HIGHER SURVEYING.—The plane table, stadia measurements, topographical surveying, the elements of geodesy, the measurement of base lines, calculation of a system of triangulation. †*Twelve hours a week for eight weeks*. Spring term. MR. WESTON; MR. GOODWIN.

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 Merriman's Hydraulics. *Five hours a fortnight*. Fall term. PROFESSOR 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. †*Seven hours a week for six weeks.* Fall term. PROFESSOR GROVER; MR. LOMBARD.

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 system of loading; the principles of designing. *Five hours a week.* Fall term. PROFESSOR GROVER.

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. *Five hours a week.* Spring term. PROFESSOR 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 twelve weeks.* Fall term. PROFESSOR GROVER; MR. LOMBARD.

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

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.* Fall term. PROFESSOR GROVER.

Ce 17. HYDRAULIC ENGINEERING.—A continuation of course 16. *Five hours a fortnight.* Spring term. PROFESSOR GROVER.

Ce 18. SANITARY SCIENCE.—Lectures on the causes and prevention of disease, sanitation and the public health, and the relations of the engineer to this work. *One hour a week.* Fall term. PROFESSOR GROVER.

MECHANICAL ENGINEERING

PROFESSOR FLINT; MR. VOSE; 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 \$4.00 a term. † *Seven hours a week for twelve weeks.* Fall term. MR. VOSE.

Me 19. MACHINE DRAWING.—Practice in tracing completed drawings, and in making drawings of standard bolts, threads, and simple machine parts, from actual dimensions. Special attention is given to the care and handling of instruments, lettering, and methods of projection.

† *Seven hours a week for six weeks.* Fall term. MR. VOSE.

Me 2. FORGE WORK.—Drawing and upsetting; welding; making rings, chain links, eye bolts, 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.* Spring term. MR. STEWARD.

Me 3. KINEMATICS.—Methods of transmitting and transforming motion, illustrated by the solution of practical problems; study of forms of gearing, cone pulleys, etc.; construction of cams, lobed wheels, and gear teeth.

The text-book is Jones's Kinematics. † *Five hours a week.* Spring term. MR. VOSE.

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 8. STRUCTURES.—A continuation of course 7, with applications to framed structures; graphic methods of analyzing roof and bridge trusses, and the stability of walls. Merriman's *Mechanics of Materials*, and Merriman's *Roofs and Bridges* are used for reference. *Five hours a fortnight*. Fall term. MR. VOSE.

Me 9. MACHINE DESIGN.—The principles of machine construction, treated by means of text-book, lectures, and a study of methods in modern practice; the preparation of working drawings, and the sketching of original designs of simple machine parts.

The text-book is Jones's *Machine Design*, Part II. † *Seven hours a fortnight*. Spring term. MR. VOSE.

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*. Fall term. PROFESSOR 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*. Fall term. PROFESSOR FLINT.

Me 12. STEAM BOILER DESIGN.—Drawings of the more important parts of the design worked out in course 11. † *Twelve hours a week*. Fall term. PROFESSOR FLINT.

Me 13. TESTING.—Tests of steam gauges, boilers, etc.; tests of different metals under tension and compression. *Five hours a fortnight*. Spring term. PROFESSOR 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; problems on the slide valve and link motion; the calculation of details of an engine.

The text-book is Auchincloss's Link and Valve Motion. *Seven hours a fortnight.* Spring term. PROFESSOR 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. PROFESSOR FLINT.

Me 16. THESIS WORK.—The design of a piece of machinery, or of some piece of scientific apparatus, or, an original investigation of some engineering problem to be fully written up and presented to the department. † *Fifteen hours a week for nine weeks.* Spring term. PROFESSOR FLINT.

ELECTRICAL ENGINEERING

PROFESSOR WEBB; MR. OWEN.

Ee 1. ELECTRICITY AND MAGNETISM.—This course continues the subject of electricity and magnetism begun in physics. The work is taken up by text-book, lectures and problems.

The text-book is Silvanus Thompson's Electricity and Magnetism. *Two hours a week.* Fall term. Required of juniors in Electrical Engineering. MR. OWEN.

Ee 2. ELECTRICITY AND MAGNETISM AND DYNAMO DESIGN.—A continuation of course 1, with the application of principles to the problems of dynamo design. The work is taken up by text-book, lectures and problems.

The text-book is Hawkins and Wallis's The Dynamo. *Three hours a week.* Spring term. Required of juniors in Electrical Engineering. MR. OWEN.

Ee 3. ELECTRICAL MACHINERY.—A course on the design and construction of direct current generators and motors. The work is taken by lectures and problems. *Five hours a fortnight.* Fall term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

Ee 4. ALTERNATING CURRENT MACHINERY.—In this course are considered the principles involved in the design, construction and operation of alternating current generators, motors, transformers and rotary converters.

The text-book is Jackson's Alternating Currents and Alternating Current Machinery. *Five hours a week for nine weeks.* Spring term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

Ee 5. DESIGN OF DIRECT CURRENT MACHINES.—This course is taken up in the drawing room. Each student is required to make the calculations and drawings of a direct current dynamo. † *Seven hours a week.* Fall term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

Ee 6. DESIGN OF ALTERNATING CURRENT MACHINES.—A drawing room course similar to course 5. The calculations and drawings are made for an alternating current generator. † *Five hours a week for nine weeks.* First half spring term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

Ee 7. LABORATORY WORK, DIRECT CURRENTS.—Tests of electrical instruments. Experimental work with generators and motors. Power and photometric tests of electric lamps. Care and management of the College lighting plant. The charge for this course is \$5. † *Five hours a week.* Fall term. Required of seniors in Electrical Engineering. MR. OWEN.

Ee 8. LABORATORY WORK, ALTERNATING CURRENTS.—A course similar to course 7. Tests of alternating current instruments. Experimental work with generators, motors, transformers and rotary converters. † *Five hours a week for nine weeks.* First half of spring term. The charge for this course is \$2.50. Required of seniors in Electrical Engineering. MR. OWEN.

Ee 9. DYNAMOS.—The general principles and theory of design. Different types of machines. Practical considerations in the construction and operation of direct current generators and motors. Connecting and starting up of generators and motors. Illustrations by laboratory experiments.

The text-book is Hawkins and Wallis's *The Dynamo*. *Two hours a week*. Fall term. Required of juniors in Mechanical Engineering. MR. OWEN.

Ee 10. DYNAMO LABORATORY WORK.—Practice in the connecting and running of direct current generators and motors. Tests for regulation, heating, efficiency and insulation. † *Five hours a week for nine weeks*. First half of spring term. Required of seniors in Mechanical Engineering. The charge for this course is \$2.50. MR. OWEN.

Ee 13. ALTERNATING CURRENTS.—Theory of alternating currents. Principles of the design and construction of alternating current generators. Methods of testing alternating current machines. The text-book is Jackson's *Alternating Currents and Alternating Current Machinery*. *Five hours a fortnight*. Fall term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

Ee 14. ELECTRICAL SIGNALLING.—Theory and construction of telegraph and telephone instruments. Methods of operating and testing. The course is taken by lectures. *Five hours a fortnight for nine weeks*. Last half of spring term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

Ee 16. THESIS WORK.—The designing of electrical apparatus, laboratory investigation, or commercial testing, with results presented in proper form. † *Fifteen hours a week for nine weeks*. Last half of spring term. Required of seniors in Electrical Engineering. PROFESSOR WEBB.

MILITARY SCIENCE AND TACTICS

MR. ———.

Each man student is required to take military drill, unless physically unfit, and to attend recitations in military science, during the first two years of his college course. In the junior and senior years this work is elective. The drill, course 1, occupies

the whole of the fall term and the first ten weeks of the spring term, one hour a day, three days in the week, counting one and one-half hours in reckoning the student's total time. Members of the sophomore class are not required to drill in the spring term, however, but are required to attend lectures and recitations in military science during the whole term, course 2, three hours a fortnight.

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 signaling with flag, lantern, heliograph, and field telegraph. (d.) Band practice. † *Three hours a week for the fall term and the first ten weeks of the spring term.*

Mt 2. ELEMENTS OF MILITARY SCIENCE.—Organization, equipment and supply of armies, camp sanitation, etc., conducted by text-book and lectures. *Three hours a fortnight.* Spring term.

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. 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 Courses 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
- The Short Course in Pharmacy

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, fifteen 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 eighteen 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 abbreviations and numerals preceding a study refer to the explanatory statements to be found on the pages given.

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 and special scientific lines. The college comprises:

The Classical Course

The Latin-Scientific Course

The Scientific Course

The Chemical Course

The Preparatory Medical Course

THE CLASSICAL COURSE

This course is planned for those who desire 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 give special attention to language, mathematics, natural science, chemistry, or physics.

At graduation the student receives the degree of Bachelor of Arts. Upon the completion of one year's prescribed graduate work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Arts.

STUDIES OF THE CLASSICAL COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Lt1, Latin, p. 55.....	4.0	Lt2, Latin, p. 55.....	4.0
Gk1, Greek p. 58.....	4.0	G2k, Greek, p. 58.....	4.0
M125, German, p. 55 or }.....	2.0	M126, German, p. 55 or }.....	2.0
M121, French, p. 53 }.....		M122, French, p. 53 }.....	
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65.....	3.0	Ms1, Solid Geometry, p. 66.....	2.0
Dr2, Math. Drawing, p. 70, 8 w....	†3.0	Dr2, Math. Drawing, p. 70, 5 w....	†3.0

SOPHOMORE YEAR.

<i>Required.</i>		<i>Required.</i>	
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
M11, French, p. 53 or }.....	4.0	M12, French, p. 53 or }.....	4.0
M15, German, p. 54 }.....		M16, German, p. 54 }.....	
Ch1, General Chemistry, p. 71....	2.5	Ch2, General Chemistry, p. 71....	2.5
Ch3, Laboratory Chemistry, p. 71	†2.0	Ch4, Laboratory Chemistry, p. 71	†2.0
<i>Elective.</i>		<i>Elective.</i>	
Gk3, Greek, p. 58.....	2.5	Gk4, Greek, p. 58.....	2.5
Gk9, Greek Sculpture, p. 59.....	2.5	Gk10, Greek Sculpture, p. 59.....	2.5
Gk11, Greek, p. 59.....	2.5	Gk12, Greek, p. 59.....	2.5
Gk13, Greek, p. 59.....	2.5	Gk14, Greek Religion, p. 59.....	2.5
Gk15, Greek Composition, p. 59..	1.0	Gk17, Italian Art, p. ....60.....	1.0
Gk16, Italian Art, p. 60.....	1.0	Lt4, Latin, p. 56.....	2.5
Lt3, Latin, p. 56.....	2.5	Ps2, General Physics, p. 68.....	2.5
Ps1, General Physics, p. 68.....	5.0	Ps13, General Physics, p. 68....	2.5
Ps2, General Physics, p. 68.....	2.5	Ps5, Laboratory Physics, p. 68..	†5.0
Ms6, Analytical Geometry, p. 66.	5.0	Ms5, Analytical Geometry, p. 66.	2.5
Ch5, Inorganic Chemistry, p. 71.	2.5	Dr3, Mechanical Drawing, p. 70.	†5.0
Ch14, Qualitative Analysis, p. 72.	†5.0	Ht1, Botany, p. 78.....	†5.0
B11, General Biology, p. 74.....	2.5	Eh5, Anglo Saxon, p. 52.....	2.5
B12, Laboratory Biology, p. 74....	†5.0	Ms7, Calculus, p. 66.....	5.0
Lt17, Roman Topography, p. 57..	1.0	Ms11, Advanced Algebra, p. 67..	2.5
Cv1, General History, p. 61.....	2.5	Ch15, Qualitative Analysis, p. 72	†5.0
M125, German, p. 55.....	2.0	Ht8, Histol. of Plants, p. 79, 9 w. }	†5.0
		Ag13, Bacteriology, p. 78, 9 w. }	†5.0
		Lt18, Roman Private Life, p. 57..	1.0
		M126, German, p. 55.....	2.0

JUNIOR YEAR.

<i>Required.</i>		<i>Required.</i>	
P11, Psychology, p. 60.....	2.5	P12, Logic, p. 60.....	2.5
<i>Elective.</i>		<i>Elective.</i>	
Gk5, Greek, p. 58.....	2.5	Gk6, Greek, p. 58.....	2.5
Lt5, Latin, p. 56.....	2.5	Lt6, Latin p. 56.....	2.5
Lt7, Roman Elegiac Poets, p. 56.	2.5	Lt8, Roman Elegiac Poets, p. 56.	2.5
Lt13, Roman Literature, p. 57....	2.5	Lt14, Roman Literature, p. 57....	2.5
Lt17, Roman Topography, p. 57..	1.0	Lt18, Roman Private Life, p. 57..	1.0
Lt19, Latin Writing, p. 57.....	1.0	Lt20, Roman Epigraphy, p. 57...	1.0
M13, French, p. 53.....	2.5	M14, French, p. 53.....	2.5
M17, German, p. 55.....	2.5	M18, German, p. 55.....	2.5
Cv3, American History, p. 61....	2.5	Cv2, English History, p. 61.....	2.5
M19, Spanish, p. 54.....	2.5	M10, Spanish, p. 54.....	2.0
M11, Italian, p. 54.....	2.5	M12, Italian, p. 45.....	2.5
M13, Old French, p. 53.....	2.5	M14, Old French, p. 53.....	2.5

JUNIOR YEAR—*Concluded.*

<i>Elective.</i>		<i>Elective.</i>	
M115, French Literature, p. 53...	2.5	M116, French Literature, p. 53...	2.5
M117, French Literature, p. 55...	2.5	M118, French Literature, p. 54...	2.5
P17, Philosophy of History, p. 61	2.5	Ms9, Descrip. Astronomy, p. 67...	2.5
Cv11, International Law, p. 62...	2.5	Ms10, Practical Astronomy, p. 67	2.5
Ms8, Calculus, p. 66.....	2.5	Ms13, Adv. Integ. Calculus, p. 67	2.5
Ms12, Advanced Integral Calculus, p. 67.....	2.5	Ms15, Differential Equations, p. 67.....	2.5
Ms20, Solid Analytical Geometry, p. 67.....	2.5	Ps7, Advanced Optics, p. 69.....	2.5
Ps8, Advanced Physics, p. 69...	2.5	Ps10, Laboratory Physics, p. 69..	†5.0
Ps9, Laboratory Physics, p. 69...	†5.0	Ch15, Qualitative Analy., p. 72...	†5.0
Ps11, Electrical Measurements and Testing, p. 69.....	†4.0	Ch16, Qualitative Analy., p. 72...	†4.0
Ch14, Qualitative Analysis, p. 72	†5.0	B17, Zoology, p. 75.....	2.5
B15, Zoology, p. 74.....	2.5	B18, Laboratory Zoology, p. 75...	†5.0
B16, Laboratory Zoology, p. 75...	†5.0	Ce7, Mechanics, p. 83.....	5.0
Ce6, Mechanics, p. 83.....	5.0	Ee2, Electricity and Magnetism, p. 87.....	2.0
Ee1, Electricity and Magnetism, p. 87.....	2.0	B111, Entomology, p. 76.....	2.5

SENIOR YEAR.

<i>Required.</i>		<i>Required.</i>	
Cv15, Constitutional Law and History, p. 62.....	2.5	Cv16, Constitutional Law and History, p. 62....	2.5
<i>Elective.</i>		<i>Elective.</i>	
Gk7, Greek, p. 58.....	2.5	Gk8, Greek, p. 58 ..	2.5
Lt5, Latin, p. 56.....	2.5	Lt6, Latin, p. 56.....	2.5
Lt9, Roman Satire, p. 56.....	2.5	Lt10, Roman Satire, p. 56.....	2.5
Lt11, Roman Philosophy, p. 66...	2.5	Lt12, Roman Philosophy, p. 57...	2.5
Lt15, Roman Rhetoric and Oratory, p. 57.....	2.5	Lt16, Roman Rhetoric and Oratory, p. 57.....	2.5
Eh10, English Literature, p. 52...	2.5	Eh11, English Literature, p. 52...	2.5
Eh12, English Literature, p. 52...	2.5	Eh13, English Literature, p. 52...	2.5
P13, Hist. of Philosophy, p. 60....	2.5	Cv12, Library Work, p. 62.....	†5.0
Ms12, Advanced Integral Calculus, p. 67.....	2.5	Ms13, Advanced Integral Calculus, p. 67.....	2.5
Ms20, Solid Analytical Geometry, p. 67.....	2.5	Ms15, Differential Equations, p. 67.....	2.5
Ms16, Practical Astronomy, p. 67	2.5	Ms17, Practical Astronomy, p. 67	2.5
B113, Geology, p. 67.....	2.5	B19, Physiology, p. 75.....	2.5
P14, Pedagogy, p. 60.....	2.5	B110, Lab. Physiology, p. 75.....	†5.0
Ht9, Plant Breeding, p. 80.....	2.5	M130, German, p. 55.....	2.5
Ht10, Forestry, p. 80.....	2.5	B114, Advanced Zoology, p. 76...	2.5
Ht11, Plant Pathology, p. 80....	†2.0		
M129, German, p. 53.....	2.5		
B114, Advanced Zoology, p. 76...	2.5		

THE LATIN-SCIENTIFIC COURSE

This course differs from the 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; and political

economy. Latin is not required after the freshman year, but may be elected in each succeeding year. By a proper selection of elective studies, the student may give special attention to language, mathematics, natural science, chemistry, or physics.

At graduation the student receives the degree of Bachelor of Philosophy. Upon the completion of one year's prescribed graduate work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Philosophy.

STUDIES OF THE LATIN SCIENTIFIC COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
M15, German, p. 53.....	4.0	M16, German, p. 53.....	4.0
Lt1, Latin, p. 55.....	4.0	Lt2, Latin, p. 55.....	4.0
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66..	3.0
Ms4, Trigonometry, p. 65.....	3.0	Ms1, Solid Geometry, p. 66 or	2.0
Ch1, General Chemistry, p. 71....	2.5	Ms19, Sp ^h . Trigonometry, p. 66 }	
Ch3, Laboratory Chemistry, p. 71, †2.0		Ch2, General Chemistry, p. 71....	2.5
Dr2, Math. Drawing, p. 70, 8 w... †3.0		Ch4, Laboratory Chemistry, p. 71 †2.0	
		Dr2, Math. Drawing, p. 70, 5 w... †3.0	

SOPHOMORE YEAR.

<i>Required.</i>		<i>Required.</i>	
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
M11, French, p. 53 or {	4.0	M12, French, p. 53 or {	4.0
M121, French, p. 53 }	2.0	M122, French, p. 53 }	2.0
Ps1, General Physics, p. 68 or {	5.0	Ps2, General Physics, p. 68 or {	2.5
Ps12, General Physics, p. 68 }	2.5	Ps13, General Physics, p. 68 }	
<i>Elective.</i>		<i>Elective.</i>	
Lt3, Latin, p. 56	2.5	Lt4, Latin, p. 56	2.5
Ms6, Analytical Geometry, p. 66. 5.0		Ms5, Analytical Geometry, p. 66. 2.5	
Ch5, Inorganic Chemistry, p. 71. 2.5		Ps5, Laboratory Physics, p. 68.. †5.0	
Ch14, Qualitative Analysis, p. 72 †5.0		Dr3, Mechanical Drawing, p. 70. †5.0	
B11, General Biology, p. 74..... 2.5		H11, Botany, p. 78..... †5.0	
B12, Laboratory Biology, p. 74... †5.0		Eh5, Anglo-Saxon, p. 52..... 2.5	
Lt17, Roman Topography, p. 57... 1.0		M57, Calculus, p. 66..... 5.0	
Gk9, Greek Sculpture, p. 59..... 2.5		M511, Advanced Algebra, p. 67... 2.5	
Gk11, Greek, p. 59..... 2.5		Ch15, Qualitative Analysis, p. 72. †5.0	
Gk13, Greek, p. 59. 2.5		H18, Histol. of Plants, p. 79, 9 w. } †5.0	
Gk16, Italian Art, p. 60..... 1.0		Ag13, Bacteriology, p. 78, 9 w... }	
Cv1, General History, p. 61. 2.5		Lt18, Roman Private Life, p. 57... 1.0	
M125, German, p. 55..... 2.0		Gk10, Greek Sculpture, p. 59..... 2.5	
		Gk12, Greek, p. 59..... 2.5	
		Gk14, Greek Religion, p. 59..... 2.5	
		Gk17, Italian Art, p. 60..... 1.0	
		M126, German, p. 55..... 2.0	

JUNIOR YEAR.

<i>Required.</i>		<i>Required.</i>	
Eh8, English Literature, p. 52....	2.5	Eh9, English Literature, p. 52 ...	2.5
Pl1, Psychology, p. 60.....	2.5	Pl2, Logic, p. 60.....	2.5
<i>Elective.</i>		<i>Elective.</i>	
M13, French, p. 53.....	2.5	M14, French, p. 53.....	2.5
M17, German, p. 55.....	2.5	M18, German, p. 55.....	2.5
Lt5, Latin, p. 56.....	2.5	Lt6, Latin, p. 56.....	2.5
Lt7, Roman Elegiac Poets, p. 56.	2.5	Lt8, Roman Elegiac Poets, p. 56.	2.5
Lt13, Roman Literature, p. 57....	2.5	Lt14, Roman Literature, p. 57....	2.5
Lt17, Roman Topography, p. 57..	1.0	Lt18, Roman Private Life, p. 57..	1.0
Lt19, Latin Writing, p. 57.....	1.0	Lt20, Roman Epigraphy, p. 57....	1.0
Cv3, American History, p. 61.....	2.0	Cv2, English History, p. 61.....	2.5
M9, Spanish, p. 54.....	2.5	M10, Spanish, p. 54.....	2.5
M11, Italian, p. 54.....	2.5	M12, Italian, p. 54.....	2.5
M15, French Literature, p. 53...	2.5	M16, French Literature, p. 53....	2.5
M17, French Literature, p. 54....	2.5	M18, French Literature, p. 54....	2.5
Pl7, Philosophy of History, p. 61	2.5	Ms9, Descrip. Astronomy, p. 67..	2.5
Cv11, International Law, p. 62...	2.5	Ms10, Practical Astronomy, p. 67	2.5
Ms8, Calculus, p. 66.....	2.5	Ms13, Adv. Integ. Calculus, p. 67	2.5
Ms12, Advanced Integral Calculus, p. 67.....	2.5	Ms15, Differential Equations, p. 67.....	2.5
Ms20, Solid Analytical Geometry, p. 67.....	2.5	Ps7, Advanced Optics, p. 69.....	2.5
Ps8, Advanced Physics, p. 66.....	2.5	Ps10, Laboratory Physics, p. 69..	15.0
Ps9, Laboratory Physics, p. 69....	15.0	Ch15, Qualitative Analy., p. 72...	15.0
Ps11, Electrical Measurements and Testing, p. 69....	14.0	Ch16, Quantitative Analy., p. 72.	14.0
Ch14, Qualitative Analysis, p. 72	15.0	B17, Zoology, p. 75.....	2.5
B15, Zoology, p. 74.....	2.5	B18, Laboratory Zoology, p. 75....	15.0
B16, Laboratory Zoology, p. 75....	15.0	Ce7, Mechanics, p. 83.....	5.0
Ce6, Mechanics, p. 83.....	5.0	Ee2, Electricity and Magnetism, p. 87.....	3.0
Ee1, Electricity and Magnetism, p. 87.....	2.0		
B11, Entomology, p. 75.....	2.5		

SENIOR YEAR.

<i>Required.</i>		<i>Required.</i>	
Cv13, Political Economy, p. 62....	2.5	Cv14, Political Economy, p. 62... 2.5	
Cv15, Constitutional Law and History, p. 62.....	2.5	Cv16, Constitutional Law and History, p. 62.....	2.5
<i>Elective.</i>		<i>Elective.</i>	
Lt5, Latin, p. 56.....	2.5	Lt6, Latin, p. 56.....	2.5
Lt9, Roman Satire, p. 56.....	2.5	Lt10, Roman Satire, p. 56.....	2.5
Lt11, Roman Philosophy, p. 56....	2.5	Lt12, Roman Philosophy, p. 57..	2.5
Lt15, Roman Rhetoric and Oratory, p. 57.....	2.5	Lt16, Roman Rhetoric and Oratory, p. 57.....	2.5
Eh10, English Literature, p. 52... 2.5		Eh11, English Literature, p. 52... 2.5	
Eh12, English Literature, p. 52... 2.5		Eh13, English Literature, p. 52... 2.5	
Pl3, Hist. of Philosophy, p. 60.... 2.5		Cv12, Library Work, p. 62.....	15.0
Ms12, Advanced Integral Calculus, p. 67.....	2.5	Ms13, Advanced Integral Calculus, p. 67.....	2.5
Ms20, Solid Analytical Geometry p. 67.....	2.5	Ms15, Differential Equations, p. 67.....	2.5
Ms16, Practical Astronomy, p. 67 2.5		Ms17, Practical Astronomy, p. 75 2.5	
B13, Geology, p. 75.....	2.5	B19, Physiology, p. 75.....	2.5
Pl4, Pedagogy, p. 70.....	2.5	B110, Lab. Physiology, p. 75.....	15.0
Ht9, Plant Breeding, p. 70.....	2.5	M130, German, p. 55.....	2.5
Ht10, Forestry, p. 80.....	2.5	B14, Advanced Zoology, p. 76... 2.5	
Ht11, Plant Pathology, p. 80....	12.0		
M129, German, p. 55.....	2.5		
B114, Advanced Zoology, p. 76... 2.5			

THE SCIENTIFIC COURSE

This course is arranged for those who seek a broad general training, based chiefly upon the study of science, modern languages, and history. It prepares students for executive positions in banking, commercial, or manufacturing establishments, or for teaching.

The work of the freshman year consists of English, modern languages, history, mathematics, drawing, chemistry, and botany. 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, French, German, English literature, English history, American history, constitutional history, psychology, logic, and political economy. The elective studies may be selected to give a comprehensive course in the mathematical or natural sciences, or a specialized course in modern languages, mathematics, physics, or natural science.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science.

STUDIES OF THE SCIENTIFIC COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65.....	3.0	Ms1, Solid Geometry, p. 96 or }	2.0
M15, German, p. 54 or }	4.0	Ms19, Sph. Trigonom., p. 66 }	
M127, German, p. 54 }		4.0	M16, German, p. 54 or }
Dr2, Mathematical Drawing, p. 70, 8 w.....	†3.0		M128, German, p. 55 }
Ch1, General Chemistry, p. 71... 2.5	2.5	Dr2, Mathematical Drawing, p. 70, 5 w.....	†3.0
Ch3, Laboratory Chemistry, p. 71... †2.0	†2.0	Ht1, General Botany, p. 78.....	†5.0
		Ch2, General Chemistry, p. 71... 2.5	2.5
		Ch4, Laboratory Chemistry, p. 71... †2.0	†2.0

SOPHOMORE YEAR.

<i>Required.</i>		<i>Required.</i>	
M11, French, p. 53 or }.....	4.0	M12, French, p. 53 or }.....	4.0
M121, French, p. 53 }	2.0	M122, French, p. 53 }	2.0
Ps1, General Physics, p. 68 or }	5.0	Ps2, General Physics, p. 68 or }	2.5
Ps12, General Physics, p. 68 }	2.5	Ps13, General Physics, p. 68 }	
		Ps5, Laboratory Physics, p. 68 ..	†5.0
		Ms5, Analytical Geometry, p. 66,	2.5

SOPHOMORE YEAR—Concluded.

<i>Elective.</i>		<i>Elective.</i>	
Ch5, Inorganic Chemistry, p. 71..	2.5	Eh5, Anglo-Saxon, p. 52	2.5
Ch14, Qualitative Analysis, p.72..	5.0	Ms7, Calculus, p. 66	5.0
Ms6, Analytical Geometry, p. 66,	5.0	Ms11, Advanced Algebra, p. 67..	2.5
B11, General Biology, p. 75.....	2.5	Ch15, Qualitative Analysis, p. 72,	5.0
B12, Laboratory Biology, p. 74....	5.0	Ht8, Histol. of Plants, p. 79,9 w. }	5.0
Lt17, Roman Topography, p. 57..	1.0	Ag13, Bacteriology, p. 78, 9 w. }	
Gk9, Greek Sculpture, p. 59.....	2.5	Lt18, Roman Private Life, p. 57..	1.0
Gk11, Greek, p. 59.....	2.5	Gk10, Greek Sculpture, p. 59.....	2.5
Gk13, Greek, p. 59.....	2.5	Gk12, Greek, p. 59.....	2.5
Gk16, Italian Art, p. 60.....	1.0	Gk17, Italian Art, p. 60.....	1.0
Cv1, General History, p. 61.....	2.5	M126, German, p. 55.....	2.0
M125, German, p. 55.....	2.0		

JUNIOR YEAR.

<i>Required.</i>		<i>Required.</i>	
Eh8, English Literature, p. 52 ...	2.5	Eh9, English Literature, p. 52 ...	2.5
M13, French, p. 53 or {	2.5	M14, French, p. 53 or {	2.5
M17, German, p. 55 {		M18, German, p. 55.. {	
P11, Psychology, p. 60	2.5	P12, Logic, p. 60	2.5
Cv3, American History, p. 61 ..	2.5	Cv2, English History, p. 61.....	2.5
<i>Elective.</i>		<i>Elective.</i>	
M19, Spanish, p. 54	2.5	M110, Spanish, p. 54	2.5
M111, Italian, p. 54	2.5	M112, Italian, p. 54	2.5
M15, French Literature, p. 53 ...	2.5	M116, French Literature, p. 53 ...	2.5
M17, French Literature, p. 54 ...	2.5	M118, French Literature, p. 54... 2.5	
P17, Philosophy of History, p. 61	2.5	Ms9, Descrip. Astronomy, p. 67..	2.5
Cv11, International Law, p. 62... 2.5		Ms10, Practical Astronomy, p. 67	2.5
Ms8, Calculus, p. 66	2.5	Ms13, Advanced Integral Calculus, p. 67	2.5
Ms12, Advanced Integral Calculus, p. 67.....	2.5	Ms15, Differential Equations, p. 67.....	2.5
Ms20, Solid Analytical Geometry, p. 67.....	2.5	Ps7, Advanced Optics, p. 69.....	2.5
Ps8, Advanced Physics, p. 69....	2.5	Ps10, Laboratory Physics, p. 69..	5.0
Ps9, Laboratory Physics, p. 69..	5.0	Ch15, Qualitative Analy., p. 72... 5.0	
Ps11, Electrical Measurements and Testing, p. 69.....	4.0	Ch16, Quantitative Analy., p. 72..	4.0
Ch14, Qualitative Analysis, p. 72,	5.0	B17, Zoology, p. 05.....	2.5
B15, Zoology, p. 74.....	2.5	B18, Laboratory Zoology, p. 75 ..	5.0
B16, Laboratory Zoology, p. 75..	5.0	Ce7, Mechanics, p. 83.....	5.0
Ce6, Mechanics, p. 83.....	5.0	Ee2, Electricity and Magnetism, p. 87.....	3.0
Ee1, Electricity and Magnetism, p. 87	2.0		
B111, Entomology, p. 75	2.5		

SENIOR YEAR.

<i>Required.</i>		<i>Required.</i>	
Cv13, Political Economy, p. 62 ..	2.5	Cv14, Political Economy, p. 62... 2.5	
Cv15, Constitutional Law and History, p. 62.....	2.5	Cv16, Constitutional Law and History, p. 62..	2.5
<i>Elective.</i>		<i>Elective.</i>	
Eh10, English Literature, p. 52 ..	2.5	Eh11, English Literature, p. 52 ..	2.5
Eh12, English Literature, p. 52 ..	2.5	Eh13, English Literature, p. 52 ..	2.5
P13, Hist. of Philosophy, p. 60....	2.5	Cv12, Library Work, p. 62.....	5.0
Ms12, Advanced Integral Calculus, p. 67	2.5	Ms13, Advanced Integral Calculus, p. 67	2.5
Ms20, Solid Analytical Geometry, p. 67.....	2.5	Ms15, Differential Equations, p. 67	2.5
Ms16, Practical Astronomy, p. 67	2.5	Ms17, Practical Astronomy, p. 67	2.5
B113, Geology, p. 75	2.5	B19, Physiology, p. 75.....	2.5

SENIOR YEAR—*Concluded.*

<i>Elective.</i>		<i>Elective.</i>	
P14, Pedagogy, p. 60.....	2.5	B110, Lab. Physiology, p. 75.....	†5.0
Ht9, Plant Breeding, p. 80.....	2.5	M130, German, p. 55.....	2.5
Ht10, Forestry, p. 80.....	2.5	B114, Advanced Zoology, p. 76...	2.5
Ht11, Plant Pathology, p. 80.....	†2.0		
M129, German, p. 55.....	2.5		
B114, Advanced Zoology, p. 76...	2.5		

THE CHEMICAL COURSE

This course is designed for those who plan 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 preparation for the work of the agricultural experiment stations. In addition to a theoretical knowledge of chemistry, the student acquires, in his biological studies, a knowledge of comparative anatomy, and of the lower forms of life, and, in his work in the laboratories, facility in the manipulation of chemical apparatus and the microscope.

Lectures and recitations are closely associated with practical work in the laboratories. The student is drilled in the use of chemical apparatus, in accurate observation, and in careful interpretation of directions.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science.

STUDIES OF THE CHEMICAL COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65.....	3.0	Ms1, Solid Geometry, p. 66 or }	2.0
M15, German, p. 54 or }	4.0	Ms19, Sph. Trigonometry, p. 66 }	
M127, German, p. 54 }		M16, German, p. 54 or }	4.0
Dr1, Drawing, p. 70.....	†5.0	M128, German, p. 55 }	
Dr2, Math. Drawing, p. 70, 8 w...	†3.0	Dr2, Math. Drawing, p. 70, 5 w...	†3.0
Ch1, General Chemistry, p. 71 ...	2.5	Ht1, General Botany, p. 78.....	†5.0
Ch3, Laboratory Chemistry, p. 71, †2.0		Ch2, General Chemistry, p. 71....	2.5
		Ch4, Laboratory Chemistry, p. 71, †2.0	

SOPHOMORE YEAR.

M11, French, p. 53 or	}	4.0	M12, French, p. 53 or	}	4.0
M12, French, p. 53 (2 hrs.) and			M122, French, p. 53 (2 hrs.) and		
M17, German, p. 55(2.5 hrs.)			M18, German, p. 55 (2.5 hrs.)		
Ps12, General Physics, p. 68.....		2.5	Ps13, General Physics, p. 68 ...		2.5
Ch5, Inorganic Chemistry, p. 17.		2.5	Ps5, Laboratory Physics, p. 68 ...		†5.0
Ch14, Qualitative Analysis, p. 72,†10.0			Ms5, Analytical Geometry, p. 66,		2.5
Bl1, General Biology, p. 74.....		2.5	Ch6, Inorganic Chemistry, p. 71..		2.5
Bl2, Laboratory Biology, p. 74... †2.0			Ch15, Qualitative Analysis, p. 72, †7.0		

JUNIOR YEAR.

P11, Psychology, p. 60	2.5	P12, Logic, p. 60.....	2.5
M17, German, p. 55 or {	2.5	M18, German, p. 55 or {	2.5
M13, French, p.53		M14, French, p. 53	
Ch7, Organic Chemistry, p. 71 ...	2.5	Ch8, Organic Chemistry, p. 72 ...	2.5
Ch10, Analytical Methods, p. 02..	1.0	Ch19, Volumetric Analysis and	†15.0
Ch16, Quan. Analysis, p. 72.....	†5.0	Assaying, p. 73.....	
Ch18, Quan. Analysis, p. 72.....	†10.0	Cv2, English History, p. 61 or	} 2.5
Eel, Electricity and Magne-	} 2.5	El9, Eng. Literature, p. 52 or	
tism, p. 87 (2 hrs.) or		Ms9, Descrip. Astronomy, p. 67 }	
Eh8, English Literature, p.52 or			
P14, Pedagogy, p. 60			

SENIOR YEAR.

Cv13, Political Economy, p. 62... 2.5	Cv14, Political Economy, p. 62... 2.5
Cv15, Constitutional Law and History, p. 62..... 2.5	Cv16, Constitutional Law and History, p. 62..... 2.5
Ch12, Organic Chemicals, p. 72... †2.5	Ch11, Laboratory Processes, p.72, 2.5
Ch20, Agricultural Analysis, p.73 †9.0	Ag13, Bacteriology, p.78, 5 w. †10
Ch21, Toxicology and Urinalysis, p. 73..... †1.0	Ch28, Dyeing, p. 74, 2 w. †15
Ch23, Organic Chemistry, p. 73 .. 2.5	Ch22, Thesis Work, p.73,13 w. †15
Bl13, Geology, p. 75..... 2.5	Ch24, Industrial Chemistry, p.73, 2.5

THE PREPARATORY MEDICAL COURSE

This course is especially arranged to meet the needs of those students who are planning to become physicians; but it also offers to those who are interested in the biological sciences a useful training for teaching or investigation.

The technical work of the course consists mainly of two lines of study, chemical and biological. In both of these lines the work is continued through the greater part of the course, and students receive sufficient training to make them familiar with methods and apparatus. Accurate observation and the careful consideration of the meaning of observed facts are the important features of this course.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science.

STUDIES OF THE PREPARATORY MEDICAL COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.

	Hours.
Eh3, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.	2.0
Ms4, Trigonometry, p. 65.....	3.0
M15, German, p. 54 or {	4.0
M127, German, p. 54 {	
Dr1, Drawing, p. 70.	†5.0
Dr2, Math. Drawing, p. 70, 8 w...	†3.0
Ch1, General Chemistry, p. 71 ...	2.5
Ch3, Laboratory Chemistry, p. 71.	†2.0

SPRING TERM—18 WEEKS.

	Hours.
Eh4, Rhetoric, p. 51.....	2.5
Ms3, Algebra, p. 66.	3.0
Ms1, Solid Geometry, p. 66 or {	2.0
Ms19, Sph. Trigonometry, p.66 {	
M16, German, p. 54 or {	4.0
M128, German, p. 55 {	
Dr2, Math. Drawing, p. 70, 5 w...	†3.0
Ht1, General Botany, p. 78.....	†5.0
Ch2, General Chemistry, p. 71 ...	2.5
Ch4, Laboratory Chemistry, p.71.	†2.0

SOPHOMORE YEAR.

M11, French, p. 53, or	} 4.0	M12, French, p. 53 or	} 4.0		
M121, French, p. 53 (2 h.) and		} 2.5		M122, French, p. 53 (2 h.) and	} 2.5
M17, German, p. 55, (2.5 hrs.)				M18, German, p. 55 (2.5 hrs.)	
Ps12, General Physics, p. 68.....	2.5	Ps13, General Physics, p. 68.....	2.5		
Ch5, Inorganic Chemistry, p. 71.	2.5	Ps5, Laboratory Physics, p. 68 ...	†5.0		
Ch14, Qualitative Analysis, p. 72.	†6.0	Ch6, Inorganic Chemistry, p. 71.	2.5		
B1, General Biology, p. 74.	2.5	Ch15, Qualitative Analysis, p. 72.	5.0		
B12, Laboratory Biology, p. 74...	†5.0	Ht3, Histology of Plants, p. 79, } 9 w. }	†5.0		
		Ag13, Bacteriology, p. 78, 9 w. }			

JUNIOR YEAR.

M17, German, p. 55 or {	} 2.5	Pl2, Logic, p. 60 or	} 2.5
M13, French, p. 53		Ag11, Veterinary Science, p.78 {	
Pl1, Psychology, p. 60	2.5	Ch19, Volumetric Analysis, p. 73.†	†11.0
Ch7, Organic Chemistry, p. 71 ...	2.5	Ch21, Toxicology and Urinalysis,	} †1.0
Ch16, Quantitative Analysis, p. 72	†6.0	p. 73.....	
B15, Zoology, p. 74.....	2.5	B17, Zoology, p. 75.....	2.5
B16, Laboratory Zoology, p. 75 ..	†5.0	B18, Laboratory Zoology, p. 75..	†5.0
Ag1, Biological Chemistry, p. 76.	2.5	Ag2, Biological Chemistry, p. 76.	5.0

SENIOR YEAR.

Cv13, Political Economy, p. 62...	2.5	Cv14, Political Economy, p. 62...	2.5
Cv15, Constitutional Law and	} 2.5	Cv16, Constitutional Law and	} 2.5
History, p. 62.....		History, p. 62.....	
Cv1, General History, p. 61	2.5	B19, Physiology, p. 75.....	2.5
B13, Geology, p. 75.....	2.5	B110, Laboratory Physiology, p.75	†5 0
Pm3, Laboratory Pharmacy, } p. 81, 9 w. }	} †10.0	P12, Logic, p. 60 or	} 2.5
Ch27, Laboratory Physiologi- cal Chemistry, p.74, 9w. }		Ag11, Veterinary Science, p. 58 {	
Pm7, Materia Medica, p. 81....	2.5	Ag14, Animal Histology, p. 78, } 9 w. }	†10.0
		Ag15, Lab. Bacteriology, p.789 w }	

COLLEGE OF AGRICULTURE

The aim of the College of Agriculture is to prepare young men to become farmers, or 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:

- The Agricultural Course
- The Special Courses in General Agriculture
- The Special Course in Horticulture
- The Special Course in Dairying
- The Agricultural Experiment Station

THE AGRICULTURAL COURSE

This course is designed for those who wish to follow agriculture as a business, or intend to become teachers or investigators in the sciences related to agriculture. It is broadly educational, particularly in the natural sciences and their relations to human needs and activities, and gives a preliminary training for either business or professional life. The distinctive studies of this course are along technical lines, but the branches pertaining to general culture, 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 necessary for the demonstration of a principle or when skilled labor is involved, but the student's time is not consumed in merely manual operations.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science.

STUDIES OF THE AGRICULTURAL COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65.....	3.0	Ms1, Solid Geometry, p. 66 or {	2.0
M15, German, p. 54 or {	4.0	Ms19, Sph. Trigonometry, p. 66 }	
M17, German, p. 54 {		4.0	M16, German, p. 54 or {	4.0
Drl, Drawing, p. 70.....	†5.0		M128, German, p. 55 {
Dr2, Math. Drawing, p. 60, 8 w ..	†3.0	Dr2, Math. Drawing, p. 70, 5 w....	†3.0
Ch1, General Chemistry, p. 71....	2.5	Ht1, General Botany, p. 78.....	†5.0
Ch3, Laboratory Chemistry, p.71, †2.0		Ch2, General Chemistry, p. 71....	2.5
		Ch4, Laboratory Chemistry, p.71, †2.0	

SOPHOMORE YEAR.

M11, French, p. 53 or	4.0	M12, French, p. 53 or	4.0
M121, French, p. 53 (2 h.) and {		4.0		M122, French, p. 53 (2 h.) and {
M17, German, p. 55 (2.5 hrs.) {	2.5		M18, German, p. 55, (2.5 hrs.) {	2.5
Ps12, General Physics, p. 68.....		2.5	Ps13, General Physics, p. 68.....		2.5
Ch5, Inorganic Chemistry, p. 71..	2.5	Ps5, Laboratory Physics, p. 68 ..	†5.0
Ch14, Qualitative Analysis, p. 72, †6.0		Ch6, Inorganic Chemistry p. 71..	2.5
B11, General Biology, p. 74.....	2.5	Ch16, Quan. Analysis, p. 72.....	†8.0
B12, Laboratory Biology, p. 74... †2.0		Ht8, Hist. of Plants, p. 79, 9 w. {	†5.0
		Ag13, Bacteriology, p. 78, 9 w. }	

JUNIOR YEAR.

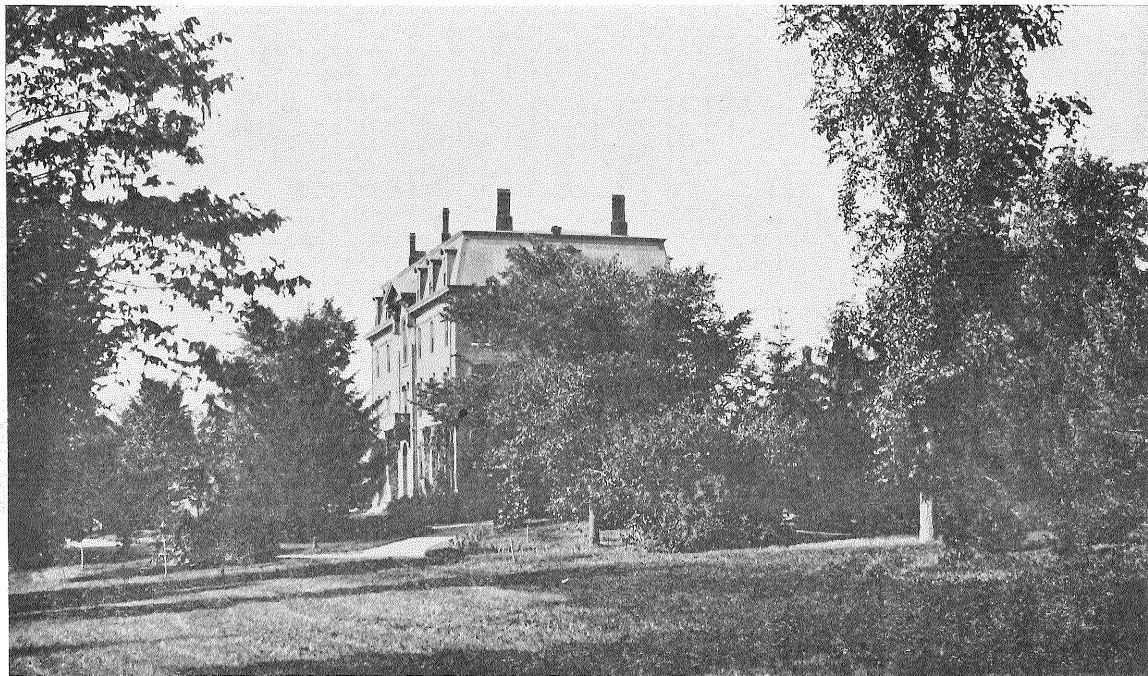
M17, German, p. 55 or {	2.5	*Cv2, English History, p. 61... ..	2.5
M13, French, p. 53 {		2.5	Ag2, Biological Chemistry, p. 76, 5.0
Ag1, Biological Chemistry, p. 76,	2.5		*Ag7, Dairying, p. 77, 9 w. ....	2.5
Ch7, Organic Chemistry, p. 71... †2.5		*Ag5, Agricultural Engineering	
*Ht2, Pomology, p. 79, 9 w.	2.5	p. 77, 9 w.	†7.0
*Ht3, Vegetable Gardening, p. } 79, 9w.		*Ag10, Dairy Practice, p.77,12 w. }	
*Ht6, Laboratory Horticulture,	†5.0	*Ag12, Dissecting, p. 78, 6 w.	2.5
p. 79.....	†6.0	*Ht4, Plant Variation, p. 79, 9 w. }	
Ch20, Agricul. Analysis, p. 73....	2.5	*Ht5, Landscape Gardening, p. }	†2.0
*B11, Entomology, p. 75	2.5	79, 9 w.	
*B12, Laboratory Entomology,	†2.5	*Ht7, Laboratory Horticulture,	†2.0
p. 75.....		p. 79.....	
		*Ht11, Plant Pathology, p. 80	†2.0

SENIOR YEAR.

Cv13, Political Economy, p. 62... 2.5	Cv16, Constitutional Law and	2.5
Cv15, Constitutional Law and	History, p. 62.....	2.5
History, p. 62.....	P12, Logic, p. 60.....	2.5
P11, Psychology, p. 60	†Ag6, Stock Feeding, p. 77, 7 w. }	5.0
B13, Geology, p. 75.	†Ag8, Stock Breeding, p. 77, 7 w. }	
†Ag3, Agricultural Chemistry, }	†Ag9, Poultry Industry, p.77,4 w. }	2.5
p. 76, 9 w.	†Ag11, Veterinary Science, p. 78, }	
†Ag4, Agricultural Physics, p. }	†B19, Physiology, p. 75.....	†5.0
76, 9 w.	†B10, Laboratory Physiology, }	
†Ht10, Forestry, p. 80.....	p. 75.....	
†B13, Cryptogamic Botany, p. 74..		
†B14, Laboratory Botany, p. 74..		

* Given to juniors and seniors in fall term of odd years and spring term of even years.

† Given to juniors and seniors in fall term of even years and spring term of odd years.



OAK HALL.

THE SPECIAL 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. To others the Special Courses in Agriculture are offered. Students are admitted to courses of such length as their time will allow, and of such breadth as their previous training will permit.

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 courses of one year or more are given on page 39.

These courses are intended to give the greatest amount of directly useful knowledge that can be acquired in the time allotted. The studies pursued must usually be selected from those announced in the catalogue, but they 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. Students in the special courses, 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 allotted, is 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.

SUBJECTS WHICH MAY BE TAKEN IN A ONE YEAR'S 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 YEAR'S 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; Pomology; 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.

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 Tuesday following the last Friday 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.

SHORT SPECIAL COURSE IN HORTICULTURE

In March of 1900 a special two weeks' course in Horticulture was given; and, if the number of applicants warrant the undertaking, the course will be again offered in the spring of 1901.

There is crowded into this short course all of the practical, helpful information possible. It is necessarily somewhat in the nature of an extended farmers' institute, and a special effort is made to outline future work for the students. The work includes a study of soils, fertilizers, fruit culture, vegetable gardening, propagation, insect and fungus enemies and remedies.

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 Station publishes the account of its work in bulletin form. The bulletins for a year form a volume of about 200 pages and

make up the annual report. Bulletins which contain matter of immediate value to practical Agriculture are sent free of cost to the entire mailing list of the Station. On request, the name of any resident of Maine will be placed on the mailing list of the Station. Bulletins which contain the record of experiments involving the technical language of science, and containing detailed data are sent to Station workers and others interested in the science of agriculture but are not sent to farmers unless they are specially asked for. The annual report of the Station is also bound with the Agriculture of Maine, copies of which can be had on application to the Secretary of the Maine Board of Agriculture, Augusta, Maine.

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, mathematics, 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. The college comprises:

- The Civil Engineering Course
- The Mechanical Engineering Course
- 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 course is planned to furnish not only technical instruction, but also the basis of a liberal education.

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.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science.

Three years after graduation upon the presentation of a satisfactory thesis and proofs of professional work, he may receive the degree of Civil Engineer.

STUDIES OF THE CIVIL ENGINEERING COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65.....	3.0	Ms1, Solid Geometry, p. 66 or } .	2.0
M15, German, p. 54 or }	4.0	Ms19, Sph. Trigonometry, p. 66 }	2.0
M17, German, p. 54 }	4.0	M16, German, p. 53 or }	4.0
Dr1, Drawing, p. 70.....	†5.0	M128, German, p. 55 }	4.0
Dr2, Math. Drawing, p. 70, 8 w... }	†3.0	Dr2, Math. Drawing, p. 70, 5 w... }	†3.0
Ch1, General Chemistry, p. 71... }	2.5	Dr3, Mechanical Drawing, p. 70. }	†5.0
Ch3, Laboratory Chemistry, p.71 }	†2.0	Ch2, General Chemistry, p. 71... }	2.5
		Ch4, Laboratory Chemistry, p.71 }	†2.0

SOPHOMORE YEAR.

M119, French, p. 52 or }	2.0	M120, French, p. 53 or }	2.0
M121, French, p. 53 }	2.0	M122, French, p. 53 }	2.0
Ms6, Analytical Geometry, p. 66. }	5.0	Ms7, Calculus, p. 66.....	5.0
Ps1, General Physics, p. 68..... }	5.0	Ps2, General Physics, p. 68..... }	2.5
Dr4, Mechanical Drawing, p. 70. }	†5.0	Ps5, Laboratory Physics, p. 68... }	†5.0
Dr6, Descriptive Geometry, p.70 }	2.5	Dr7, Descriptive Geometry, p.70. }	1.5
Ce18, Sanitary Science, p. 84..... }	1.0	Ce1, Plane Surveying, p. 82..... }	2.5
		Ce2, Field Work, Surveying, p.82. }	†4.0

JUNIOR YEAR.

P11, Psychology, p. 60.....	2.5	Cv2, English History, p. 61.....	2.5
Ms8, Calculus, p. 66.....	2.5	P12, Logic, p. 60.	2.5
Ms12, Adv. Int. Calculus, p. 67 or }	2.5	Ms13, Adv. Int. Calculus, p. 67 or }	2.5
Ms20, Solid Analytical Geome- }	2.5	Ms15, Diff. Equations, p. 67 or }	2.5
try, p. 67 or }	2.5	Ms9, Descriptive Astronomy, }	2.5
B113, Geology, p. 75 or }	2.5	p. 67 or }	2.5
Ps8, Math. Physics, p. or 69 }	2.5	Ps7, Advanced Optics, p. 69 or }	2.5
Ps9, Adv. Physics, p. 69 (†5hrs.) }	2.5	Ps10, Adv. Lab. Physics, p. 69 }	2.5
Ce3, Railroad Engineering, p. 82. }	2.5	(†5 hrs.) }	2.5
Ce4, Railroad Work, p. 83..... }	†5.0	Dr5, General Drawing, p. 70, 5w. }	†12.0
Ce5, Highway Engineering, p. 83 }	2.0	Dr8, Stereotomy, p. 71, 5 w. }	†12.0
Ce6, Mechanics, p. 83 ... }	5.0	Ce9, Higher Surveying, p.83, 8w. }	5.0
		Ce7, Mechanics, p. 83	5.0

SENIOR YEAR.

Cv13, Political Economy, p. 62... }	2.5	Cv14, Political Economy, p. 62... }	2.5
Cv15, Constitutional Law and }	2.5	Cv16, Constitutional Law and }	2.5
History, p. 62..... }	2.5	History, p. 62..... }	2.5
Ce8, San. Engineering, p. 83 or }	2.5	Ms10, Practical Astronomy, p. 67 }	2.5
Mathematics, or Physics }	2.5	Ce13, Structures, p. 84	5.0
as in Junior Year..... }	2.5	Ce15, Designing and Thesis }	5.0
Ce10, Hydraulics, p. 83..... }	2.5	Work p. 84 or }	5.0
Ce12, Structures, p. 84..... }	5.0	Math. or Physics, as in }	†12.0
Ce11, Hydraulics Field Work, }	†7.0	Junior Year, elective }	†12.0
p. 84, 6 w. }	†7.0	with †5 hours of Ce15... }	†12.0
Ce14, Designing, p. 84, 12 w. }	†7.0		

THE MECHANICAL ENGINEERING COURSE

This course is designed to give such a training in mathematics, mechanics, the principles of mechanism, in 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, the 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, analytical mechanics, hydro-mechanics, the strength of materials, the expansion of steam, the construction of steam engines, and the designing of steam boilers.

The methods of instruction include lectures, recitations, practice in the various branches of shop-work, the solution of problems, the testing of theoretical results by comparison with modern machinery, the inspection of important plants, and the use of journals and catalogues.

The recitation rooms and designing rooms are in Wingate Hall. The machine shop is equipped with iron working and wood working machinery of the most approved forms.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science. Three years after graduation, upon the presentation of a satisfactory thesis and proofs of professional work, he may receive the degree of Mechanical Engineer.

STUDIES OF THE MECHANICAL ENGINEERING COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.	3.0
Ms4, Trigonometry, p. 65.....	3.0	Msl, Solid Geometry, p. 66 }	2.0
M15, German, p. 54 or /	4.0	or	
M127, German, p. 54 {	4.0	Ms19, Sph. Trigonom., p. 66 }	
Dr1, Drawing, p. 70.....	†5.0	M16, German, p. 54 or {	4.0
Dr2, Math. Drawing, p. 70, 8 w... †3.0		M128, German, p. 55 {	4.0
Ch1, General Chemistry, p. 71... 2.5		Dr2, Math. Drawing, p. 70, 5 w... †3.0	
Ch3, Laboratory Chemistry, p. 71. †2.0		Dr3, Mechanical Drawing, p. 70. †5.0	
		Ch2, General Chemistry, p. 71... 2.5	
		Ch4, Laboratory Chemistry, p. 71 †2.0	

SOPHOMORE YEAR.

M119, French, p. 52 or {	2.0	M120, French p. 53 or {	2.0
M121, French, 53		M122, French, p. 53	
Ms6, Analytical Geometry, p. 66.	5.0	Ms7, Calculus, p. 66.....	5.0
Ps1, General Physics, p. 68.....	5.0	Ps2, General Physics, p. 68.....	2.5
Dr6, Descriptive Geometry, p. 60	2.5	Ps5, Laboratory Physics, p. 68...}	†5.0
Me1, Carpentry, p. 85, 12 w.		Dr7, Descriptive Geometry, p. 70	1.5
Me19, Machine Drawing, p. 85 } 6 w.....	†7.0	Me2, Forge Work, p. 85.....	†5.0
		Me3, Kinematics, p. 85.	†5.0

JUNIOR YEAR.

P11, Psychology, p. 60.....	2.5	Cv2, English History, p. 61.....	2.5
Ms8, Calculus, p. 66.....	2.5	P12, Logic, p. 60.	2.5
Bl13, Geology, p. 75 or		Ce7, Mechanics, p. 83.....	5.0
Ms12, Advanced Integral Cal- culus, p. 67 or	} 2.5	Me9, Machine Design, p. 86.....	3.5
Ms20, Solid Analytical Geom- etry, p. 67 or		Me4, Machine Work, p. 85 or	} †10.0
Ps8, Advanced Physics, p. 69 or	Ms13, Advanced Integral Cal- culus, p. 17, 2.5 hrs. or	Ms15, Differential Equations, p. 67, 2.5 hrs., or	
Ps9, Laboratory Physics, p. 69†5		Ps7, Advanced Optics, p. 69 2.5 hrs. or	
Ce6, Mechanics, p. 83.....	5.0	Ps10, Laboratory Physics, p. 69 †5 hrs., elective with †5 hrs. of Me4.....	
Me4, Machine Work, p. 85 or	} †8.0		
Ps11, Electrical Measurement and Testing, p. 69, elec- tive with †4hrs. of Me4			
Ee9, Dynamis, p. 88.....	2.0		

SENIOR YEAR.

Cv13, Political Economy, p. 62...	2.5	Cv14, Political Economy, p. 62...	2.5
Cv15, Constitutional Law and History, p. 62.....	2.5	Cv16, Constitutional Law and History, p. 62.....	2.5
Me8, Structures, p. 86.....	2.5	Ee10, Dynamo Laboratory Work, p. 89, 1st 9 w.....	†5.0
Me10, Hydro-Mechanics, p. 86.....	2.5	Me13, Testing, p. 86, 2d 9 w.	2.5
Me11, Heat and Steam, p. 86.....	2.5	Me14, Steam Engine, p. 86.....	3.5
Me12, Steam Boiler Design, p. 85 or	} †12.0	Me15, Steam Engine Design, p. 87, 9 w., and	} †5.0
Mathematics or Physics, as in Junior year, elec- tive with †5 hrs. of Me12				Me16, Thesis Work, p. 87, 9 w. or Mathematics or Physics as in Junior year, elec- tive with †5 hrs. of Me15 and Me16,

THE ELECTRICAL ENGINEERING COURSE

This course is intended to provide a thorough preparation in the scientific principles involved in the practice of electrical engineering; to explain and illustrate the application of these principles to the design, construction, installation and running of apparatus with which the electrical engineer has to deal, and to give practice and experience in the care and management of the same.

For the first two years the Electrical and Mechanical Engineering courses are identical. During the junior year students in electrical engineering take up electricity and magnetism,

and dynamo design. This work is followed in the senior year by recitations, lectures, drawing room and laboratory work in direct and alternating currents.

During this time the student also acquires a knowledge of shop work, mechanical drawing, mathematics, physics, mechanics, steam engineering and kindred subjects. Beside the technical work he receives training in English, French and German, logic, history, political economy and constitutional law.

The equipment has been largely increased during the past year and the facilities for laboratory work are ample. The apparatus includes most of the standard forms of direct and alternating current machines and instruments.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed graduate work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science. Three years after graduation, upon the presentation of a satisfactory thesis and proofs of professional work, he may receive the degree of Electrical Engineer.

STUDIES OF THE ELECTRICAL ENGINEERING COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM--18 WEEKS.		SPRING TERM--18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51.....	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65.....	3.0	Msl, Solid Geometry, p. 26, } .. 2.0	
M16, German, p. 54 or }	4.0	or	
M127, German, p. 54 }	4.0	Ms19, Sph. Trigonom., p. 66 }	4.0
Dr1, Drawing, p. 70.	†5.0	M16, German, p. 54 or }	4.0
Dr2, Math. Drawing, p. 70, 8 w...	†3.0	M128, German, p. 55 }	4.0
Ch1, General Chemistry, p. 71....	2.5	Dr2, Math. Drawing, p. 70, 5 w ..	†3.0
Ch3, Laboratory Chemistry, p. 71	†2.0	Dr3, Mechanical Drawing, p. 70.	†5.0
		Ch2, General Chemistry, p. 71....	2.5
		Ch4, Laboratory Chemistry, p. 71	†2.0

SOPHOMORE YEAR.

M119, French, p. 52 or }	2.0	M120, French, p. 53, or }	2.0
M121, French, p. 53 }	2.0	M122, French, p. 53 }	2.0
Ms6, Analytical Geometry, p. 66,	5.0	Ms7, Calculus, p. 66	5.0
Ps1, General Physics, p. 68.....	5.0	Ps2, General Physics, p. 68.....	2.5
Dr6, Descriptive Geometry, p.70,	2.5	Ps5, Laboratory Physics, p. 68..	†7.0
Me1, Carpentry, p. 85, 12 w.....	†7.0	Dr7, Descriptive Geometry, p. 70	1.5
Me19, Machine Draw., p. 85, 6 w }	†7.0	Me2, Forge Work, p. 85.....	†5.0
		Me3, Kinematics, p. 85.....	†5.0

JUNIOR YEAR.

P11, Psychology, p. 60.....	2.5	Cv2, English History, p. 61.....	2.5
Ms8, Calculus, p. 66.....	2.5	P12, Logic, p.60	2.5
B113, Geology, p. 75 or	}	Ce7, Mechanics, p. 73	5.0
Ms12, Advanced Integral Cal- culus, p. 67, or		Me9, Machine Design, p. 86, or	}
Ms20, Solid Analytical Geome- try, p. 67, or	Ms13, Advanced Integral Cal- culus, p. 67, 2.5 or	Ms15, Differential Equations, p. 67, 2.5, or		3.5
Ps8, Advanced Physics, p.69, or	}	Ps7, Advanced Optics, p. 69, 2.5, or	}
Ps9, Laboratory Physics, p. 69, f5.0, or		Ps10, Lab. Physics, p. 69, f5.0	
Ps14, Electrical Measurement and Testing, p. 69, f5.0	}	Ee2, Electricity and Magnetism, and Dynamo Design, p.98	3.0
Ps11, Electrical Measurement and Testing, p. 69.....		f4.0	Me4, Machine Work, p. 85.....	f5.0
Ce6, Mechanics, p. 83	5.0		
Ee1, Electricity and Magnetism, p. 87	2.0		
Me4, Machine Work, p. 85.....	f4.0		

SENIOR YEAR.

Cv13, Political Economy, p. 62...	2.5	Cv14, Political Economy, p. 62...	2.5
Cv15, Constitutional Law and History, p. 62.....	2.5	Cv16, Constitutional Law and History, p. 62.....	2.5
Me11, Heat and Steam, p. 86. ...	2.5	Me14, Steam Engine, p. 86, or Mathematics, or Phy- sics, as in Junior year.)	3.5
Ee3, Electrical Machinery, p. 87,	}	Ee4, Alternating Current Machinery, p. 88, 1st 9 w..	5.0
Ee5, Design of Direct Current Machines, p. 88 ...		f7.0	Ee6, Design of Alternating Cur- rent Mach., p. 88, 1st 9 w...	f10.0
Ee7, Laboratory Work, Direct Currents, p. 88	f5.0	Ee8, Laboratory Work, p. 88, 1st 9 w.	f5.0
Ee13, Alternating Currents, p. 89,	2.5	Ee14, Electrical Signalling, p. 89, 2nd, 9 w.....	2.5
		Ee16, Thesis Work, p. 89, 1st 9 w.	f15.0

COLLEGE OF PHARMACY

The College of Pharmacy comprises :

The Pharmacy Course

The Short Course in Pharmacy

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 a 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.

Instruction in pharmaceutical studies is given by means of lectures, recitations, and tests, supplemented by work in the laboratories of chemistry and pharmacy. It embraces qualitative, quantitative, and volumetric analysis, toxicology, bacteriology, prescriptions, and the preparation of pharmaceutical compounds, and original investigations.

At graduation the student receives the degree of Bachelor of Science. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, he receives the degree of Master of Science.

STUDIES OF THE PHARMACY COURSE

For Declamations and Themes see page 51; for Military Science see page 89.

FRESHMAN YEAR.

FALL TERM—18 WEEKS.		SPRING TERM—18 WEEKS.	
	Hours.		Hours.
Eh3, Rhetoric, p. 51.....	2.5	Eh4, Rhetoric, p. 51	2.5
Ms2, Algebra, p. 65.....	2.0	Ms3, Algebra, p. 66.....	3.0
Ms4, Trigonometry, p. 65	3.0	Ms1, Solid Geometry, p. 66or	} 2.0
M15, German, p. 54 or	} 4.0	Ms19, Sph. Trigonometry, p. 66	
M127, German, p. 54		} 4.0	M16, German, p. 54 or	} 4.0
Dr1, Drawing, p. 70.....	†5.0		M128, German, p. 55		} 4.0
Dr2, Math. Drawing, p. 70, 8 w..	†3.0	Dr2, Math. Drawing, p. 70, 5 w...	†3.0
Ch1, General Chemistry, p. 71. . .	2.5	Ht1, General Botany, p. 78.....	†5.0
Ch3, Laboratory Chemistry, p. 71	†2.0	Ch2, General Chemistry, p. 71 ...	2.5
		Ch4, Laboratory Chemistry, p.71	†2.0

SOPHOMORE YEAR.

M11, French, p. 53 or	} 4.0	M12, French, p. 53 or	} 4.0
M121, French, p. 53, (2 hrs.) and		M122, French, p. 53 (2 hrs.) and	
M17, German, p. 55, (2.5 hrs.)	} 2.5	M18, German, p. 55(2.5 hrs.)	} 2.5
Ps12, General Physics, p. 68.....		Ps13, General Physics, p. 68.....	
Ch5, Inorganic Chemistry, p. 71. .	2.5	Ps5, Laboratory Physics, p. 68..	†5.0
Ch14, Qualitative Analysis, p. 72.†	10.0	Ch6, Inorganic Chemistry, p. 72..	2.5
Bl1, General Biology, p. 74.....	2.5	Ch15, Qualitative Analysis, p. 72..	†7.0
Bl2, Laboratory Biology, p. 74...†	5.0	Ht8, Histology of Plants, p. 79, } 9 w. }	†5.0
		Ag13, Bacteriology, p. 78, 9 w. }	

JUNIOR YEAR.

P11, Psychology, p. 60	2.5	Ch8, Organic Chemistry, p. 72 ...	2.5
M17, German, p. 55 or	} 2.5	Ch21, Toxicology and Urinalysis,	} 2.0
M13, French, p. 53		p. 73.....	
Ch7, Organic Chemistry, p. 71. . .	2.5	Ag2, Biological Chemistry, p. 76. .	5.0
Ch10, Analytical Methods, p. 72..	1.0	Bl9, Physiology, p. 75.....	2.5
Ch16, Quantitative Analysis, p. 72.†	10.0	Bl10, Laboratory Physiology, p. 75	†5.0
Ag1, Biological Chemistry, p. 76. .	2.5	Pm6, Organic Pharmacognosy,	} 4.0
Pm5, Inorganic Pharmacognosy,	} 2.5	p. 81.	
p. 81.....			

SENIOR YEAR.

Cv13, Political Economy, p. 62..	2.5	P12, Logic, p. 60 or	} 2.5
Cv15, Constitutional Law and	} 2.5	Cv14, Political Economy, p. 62	
History, p. 62.....		Cv16, Constitutional Law and	} 2.5
Pm2, Pharmacy, p. 80.....	5.0	History, p. 62.....	
Pm3, Laboratory Pharmacy, p. 81.†	12.0	Pm4, Pharmacopœia, p. 81	5.0
Pm7, Materia Medica, p. 81. . . .	2.5	Pm8, Thesis Work, p. 81, 9 w.	†12.0
		Pm11, Prescriptions, p. 82.....	2.5
		Ag15, Laboratory Bacteriology,	} 10.0
		p. 78, 9 w	

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 as broad a range of subjects is offered 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 the degree of Pharmaceutical Chemist.

STUDIES OF THE SHORT COURSE IN PHARMACY

For Military Science see page 89.

FIRST YEAR.

FALL TERM—18 WEEKS.

	Hours.
Ps3, Elementary Physics, p. 68...	2.5
Ch1, General Chemistry, p. 71...	2.5
Ch14, Qualitative Analysis, p. 72,†12.0	
Pm1, Pharmacy, p. 80.....	5.0
Pm5, Inorganic Pharmacognosy, p. 81.....	2.5

SPRING TERM—18 WEEKS.

	Hours.
Ps4, Elementary Physics, p. 68...	2.0
Ps6, Laboratory Physics, p. 68...	†1.0
Ch2, General Chemistry, p. 71...	2.5
Ch16, Qualitative Analysis, p. 72, 9 w. }	†14.0
Ch19, Volumetric Analysis, p. 83, 9 w. }	
H11, General Botany, p. 78.....	†5.0
Pm6, Organic Pharmacog., p. 81,	4.0

SECOND YEAR.

Ch7, Organic Chemistry, p. 71...	2.5
A71, Biological Chemistry, p. 76,	2.5
Pm2, Pharmacy, p. 80.....	5.0
Fm3, Laboratory Pharmacy, p.81,†12.0	
Pm7, Materia Medica, p. 81.....	2.5

Ch8, Organic Chemistry, p. 72...	2.5
Ch21, Toxicology and Urinalysis, p. 73.....	†2.0
Hts, Hist. of Plants, p. 73, 9 w. }	†5.0
Ag13, Bacteriology, p. 78, 9 w. }	
Pm4, Pharmacopœia and Pre- scriptions, p. 81.....	5.0
Pm9, Pharmacy Readings, p. 82	†5.0
Pm10, Laboratory Pharmacy, p.82	†5.0
Pm11, Prescriptions, p. 82.....	2.5

SCHOOL OF LAW

FACULTY

ABRAM WINEGARDNER HARRIS, Sc. D., LL. D.,
President of the University.

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

ALLEN ELLINGTON ROGERS, M. A.,
Professor of Constitutional Law.

WILLIAM EMANUEL WALZ, M. A., LL. B.,
Professor of Law.

ARTHUR WELLINGTON PRICE, B. A., LL. B.,
Instructor in Law.

CHARLES HAMLIN, M. A.,
Lecturer on Bankruptcy.

LUCILIUS ALONZO EMERY, LL. D.,
Lecturer on Roman Law.

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

LOUIS CARVER SOUTHARD, M. S.,
Lecturer on Medical Jurisprudence.

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

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

RALPH KNEELAND JONES, B. S.,
Librarian.

The School of Law was opened to students in 1898. It occupies rooms in the Exchange Building, at the corner of State and Exchange streets, Bangor. In this city 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 twenty-five hundred volumes, including full sets of the reports of the Supreme Courts of the United States, Maine, Massachusetts, New Hampshire, Vermont, Connecticut, Rhode Island, and Ohio, the reports of the Court of Appeals of New York, the American Decisions, American Reports, American State Reports, the Lawyers' Annotated Reports, the leading text-books, and the leading periodicals.

ADMISSION

Graduates of any college or satisfactory preparatory school are admitted to the school 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 from other law schools of good standing are admitted to classes in this school corresponding to classes in the schools from which they come, upon the production of a certificate showing the satisfactory completion of the prior work in such schools.

Students from law offices are admitted to advanced standing upon passing a satisfactory examination upon the earlier subjects of the course.

Members of the bar of any state are admitted to the senior class, without examination, as candidates for the degree of Bachelor of Laws.

METHODS OF INSTRUCTION

The school is not committed exclusively to any one method of instruction, and recognizes the value of lectures by able men, and the profit to be found in the use of standard text-

books, but the great stress is placed upon the study of selected cases, and most of the work is carried on in this way. It is believed that through the case the student can best come at and comprehend the controlling principles of the law, and that in no other way can he get so firm a grip and so vital a comprehension of them. "Through the case to the principle," may perhaps adequately indicate the standpoint of the school in the matter of method.

Particular stress is placed upon the Practice Court, which is held once a week as a part of the work of the school, and in which every student is required to appear regularly. The questions of law are in all instances made to arise from the pleadings prepared by the students, and briefs, summarizing the points involved and the authorities cited, are submitted to the presiding judge. During the present year members of the Penobscot Bar have served in the capacity of judge, and it is expected that their services may be secured hereafter. Jury trials are frequently held, the records of recent cases actually tried before the Supreme Court sitting at nisi prius being used for that purpose.

The aim and spirit of the school are eminently practical, the purpose being to equip men for the every day duties of the practicing attorney.

COURSE OF STUDY

The course of study covers three years, in accordance with the requirements for admission to the bar in the State of Maine. College graduates, however, may be able to complete the course in two years. 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.

EXPENSES

The annual tuition fee is \$60. The graduation fee is \$10. There are no other charges.

Board and furnished rooms, with light and heat, may be obtained in the most convenient locations, at a price ranging from \$3 to \$7 a week. In other parts of the city lower rates may be obtained. It is believed that expenses in this, as well as in other departments of the University, are lower than in any other college of New England.

DEGREES

At the completion of the course, the degree of Bachelor of Laws is conferred. Upon the completion of one year's prescribed work in residence, or two years' in absence, including the presentation of a satisfactory thesis, the degree of Master of Laws will be granted.

COMMENCEMENT

The Commencement exercises of 1900 were as follows:—

Saturday, June 9: Junior Exhibition.

Sunday, June 10: Baccalaureate Sermon, by Rev. George L. Hanscom, Newark, N. J.

Monday, June 11: College Convocation, including reports of departments and student enterprises, and the awarding of prizes; Class Day Exercises; Public Exercises of Beta Theta Pi in connection with its 25th Anniversary.

Tuesday, June 12: Laying the corner stone of the Drill Hall; Receptions by the Fraternities; President's Reception.

Wednesday, June 13: Commencement Exercises; Commencement Dinner; Meeting of the Alumni Association; Alumni Reunion.

CERTIFICATES AND DEGREES

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

William Henry Crowell, Middletown, Conn.

George Pearson Larrabee, Pride's Corner.

DeForest Reed Taft, Winchester, N. H.

The Bachelor's degree was conferred upon the following persons:

Harry Woodward Beedle, B. M. E. (in Electricity), South Gardiner.

Alan Laurence Bird, B. M. E. (in Electricity), Rockland.

Frank Harvey Bowerman, B. C. E., Victor, N. Y.

William Joseph Burgess, B. M. E., Calais.

Agnes Rowena Burnham, B. Ph., Oldtown.

Walter Neal Cargill, B. M. E. (in Electricity), Liberty.

Wilfred Harold Caswell, B. M. E. (in Electricity), Bridgton.

Wilkie Collins Clark, B. S., Skowhegan.

James Edward Closson, B. S. (in Chemistry), Monson, Mass.

- Clinton Llewellyn Cole, B. C. E., Pleasantdale.
Harry Ashton Davis, B. M. E., Orono.
Henry Frank Drummond, B. M. E. (in Electricity), Bangor.
Julian Sturdevant Dunn, B. M. E. (in Electricity), Cumberlandland.
Herbert Davidson Eaton, B. S. (in Preparatory Medicine).
Bangor.
Philip Ross Goodwin, B. C. E., Randolph.
Charles Perley Gray, B. S. (in Preparatory Medicine),
Oldtown.
George Otis Hamlin, B. M. E., Orono.
Malcolm Cole Hart, B. C. E., Willimantic.
Howard Andrew Hatch, B. C. E., Lindenville, Ohio.
James Arthur Hayes, B. S. (in Chemistry), Randolph.
Guy Alfred Hersey, B. C. E., Bangor.
Clifford Dyer Holley, B. S. (in Chemistry), Farmington.
Leon Herbert Horner, B. S., Springfield, Mass.
William Goldsbrough Jones, B. S., Bucksport.
Thomas Francis Judge, B. M. E. (in Electricity), Biddeford.
Harry Hewes Leathers, B. M. E., Bangor.
Charles Hutchinson Lombard, B. C. E., Portland.
Alexander Love, B. C. E., East Bluehill.
John Gardner Lurvey, B. M. E. (in Electricity), Portland.
Frank McDonald, B. M. E. (in Electricity), Portland.
Howard Lewis Maddocks, B. C. E., Skowhegan.
Edwin Jonathan Mann, B. M. E., West Paris.
Wilbur Louis Merrill, B. M. E. (in Electricity), East
Parsonsfield.
Fred Carleton Mitchell, B. S., West Newfield.
Frank Henry Mitchell, B. S. (in Chemistry), Charleston.
George Ferguson Murphy, B. C. E., Alewife.
Frank Albert Noyes, B. M. E. (in Electricity), Berlin,
N. H.
Alden Bradford Owen, B. M. E. (in Electricity), West
Pembroke.
Arthur Southwick Page, B. C. E., Fairfield.
DeForest Henry Perkins, B. Ph., North Brooksville.
Daniel Lara Philoon, B. S. (in Chemistry), Auburn.
Charles Omer Porter, B. C. E., Cumberland Mills.

Percy Leroy Ricker, B. S. (in Preparatory Medicine),
Westbrook.
Charles Alphonso Robbins, B. Ph., Patten.
Clarence Herbert Rollins, B. M. E. (in Electricity),
Veazie.
Frank Morris Rollins, B. S. (in Chemistry), Waterville.
Leo Bernard Russell, B. C. E., Farmington.
Stanley Sidensparker, B. S., Warren.
Clinton Leander Small, B. A., Auburn.
Edward Henry Smith, B. M. E., East Sullivan.
Freeman Ames Smith, B. S., Thorndike, Mass.
Adah Snowdeal, B. A., Augusta.
Grosvenor Wilson Stickney, B. M. E., Clinton, Mass.
Edward Moore Strange, B. C. E., Calais.
Howard Clinton Strout, B. M. E. (in Electricity), Orono.
Edwin Morrel Tate, B. C. E., South Corinth.
Fred Foy Tate, B. C. E., South Corinth.
Fred Hale Vose, B. M. E. (in Electricity), Milltown, N. B.
Frank Elijah Webster, B. M. E., Patten.
Benjamin Thomas Weston, B. C. E., Madison.
Wallace Augustus Weston, B. C. E., Madison.
Joseph Onon Whitcomb, B. Ph., Morrill.

The degree of Bachelor of Laws was conferred upon:

Lewis Appleton Barker, Bangor.
Harold Elijah Cook, Vassalboro.
John Frederick Dolan, Bangor.
Paul Frank Foss, Weston.
Hiram Gerrish, Brownville.
Bernard Gibbs, Glenburn.
Claude Dewing Graton, Burlington, Vt.
Ernest Emery Hobson, Palmer, Mass.
Edward Hutchings, Brewer.
Freeland Jones, Bangor.
Verdi Ludgate, Lubec.
Matthew McCarthy, Bangor.
John Daniel Mackay, Lake Ainslee, Cape Breton.
Chester Horace Mills, Skowhegan.
Harold John Phillips, Skowhegan.
Howard Pierce, Blaine.
Arthur Wellington Price, North Waldoboro.

Agnes May Robinson, Sherman Station.
 Walter Joseph Sargent, Brewer.
 Lewis Harry Schwartz, Lawrence, Mass.
 Frank Jackson Small, Oldtown.
 James Bissett Stevenson, Farmington.
 Dana Leo Theriault, Caribou.
 Frederick Everett Thompson, Bangor.
 William Henry Waterhouse, Oldtown.
 Dana Scott Williams, Lewiston.

The degree of Master of Science, upon the presentation of a satisfactory thesis, and proof of three years' professional work, was conferred upon:

Allen Rogers, B. S., Orono, class 1897.

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

William Cross Holden, B. M. E., Lynn, Mass., class of 1892.
 Perley Walker, B. M. E., Orono, class of 1896.

The honorary degree of Doctor of Laws was conferred upon:
 William Thomas Haines, B. S., LL. B., Waterville, class of 1876.

The honorary degree of Doctor of Engineering was conferred upon:

Jonathan Vernet Cilley, B. C. E., Cruz del Eji, Argentina, class of 1883.

The various prizes were awarded last year as follows:

The Kidder Scholarship to Henry Wilmott Chadbourne, Mattawamkeag.

The Prentiss Prize to Maurice Barnaby Merrill, Stillwater.

The Prentiss Declamation Prize to Edith Mae Bussell, Oldtown.

The Libbey Prize to LeRoy Harris Harvey, Orono.

The Walter Balentine Prize to Lewis Robinson Cary, Bowdoinham.

The Pharmacy Prize to George Pearson Larrabee, Pride's Corner.

APPOINTMENTS

SPEAKERS AT COMMENCEMENT, JUNE, 1900.

Charles Perley Gray, Oldtown; Ernest Emery Hobson, Palmer, Mass.; William Goldsborough Jones, Bucksport; Frank McDonald, Portland; Fred Carleton Mitchell, West Newfield; Alden Bradford Owen, West Pembroke; Charles Omer Porter, Cumberland Mills; Arthur Wellington Price, North Waldoboro; Fred Hale Vose, Milltown, N. B.; Joseph Onon Whitcomb, Morrill.

SPEAKERS AT THE JUNIOR EXHIBITION, JUNE, 1900.

Fred Hanson Bogart, Chester, Conn.; George Harold Davis, Auburn; Gertrude Lee Fraser, Oldtown; Henry Herbert Leonard, Orono; Fred Holt Lowell, North Penobscot; Bertrand Clifford Martin, Fort Fairfield; Maurice Barnaby Merrill, Stillwater; Alson Haven Robinson, Orono.

SPEAKERS AT THE SOPHOMORE PRIZE DECLAMATION CONTEST, DECEMBER, 1899.

Enoch Joseph Bartlett, Monroe; Melvin Merle Blaisdell, Fort Fairfield; Edith Mae Bussell, Oldtown; Harold Malcolm Carr, Sangerville; Henry Ernest Cole, Pleasantdale; Henry Carter French, Rumford Center; Frank Winthrop Kallom, South Berlin, Mass.; Patrick Edward McCarthy, Lewiston.

MEMBERS OF THE PHI KAPPA PHI.

Walter Neal Cargill, Liberty; Clinton Llewellyn Cole, Pleasantdale; Philip Ross Goodwin, Randolph; James Arthur Hayes, Randolph; Charles Hutchinson Lombard, Portland; John Gardner Lurvey, Portland; Alden Bradford Owen, West Pembroke; Fred Hale Vose, Milltown, N. B.; Benjamin Thomas Weston, Madison; Wallace Augustus Weston, Madison.

STUDENTS RECEIVING GENERAL HONORS.

Walter Neal Cargill, Liberty; Clinton Llewellyn Cole, Pleasantdale; Harry Ashton Davis, Orono; Philip Ross Goodwin, Randolph; James Arthur Hayes, Randolph; Clifford Dyer Holley, Farmington; Charles Hutchinson Lombard, Portland; Edwin Jonathan Mann, West Paris; Fred Carleton Mitchell, West Newfield; Alden Bradford Owen, West Pembroke; Grosvenor Wilson Stickney, Clinton, Mass.; Fred Hale Vose, Milltown, N. B.; Benjamin Thomas Weston, Madison; Wallace Augustus Weston, Madison; Joseph Onon Whitcomb, Morrill.

STUDENTS RECEIVING SPECIAL HONORS.

SENIORS.

Clinton Llewellyn Cole, Pleasantdale, Civil Engineering.
 Clifford Dyer Holley, Farmington, Chemistry.
 Charles Hutchinson Lombard, Portland, Civil Engineering and Mathematics.
 Benjamin Thomas Weston, Madison, Mathematics.
 Wallace Augustus Weston, Madison, Civil Engineering.

JUNIORS.

Thomas Buck, Orland, Mathematics.
 George Harold Davis, Auburn, Physics.
 Benjamin Franklin Faunce, Norway, Physics.
 LeRoy Harris Harvey, Orono, Natural History.

CATALOGUE OF STUDENTS

GRADUATE STUDENTS

Beck, William Porter, B. S.,	Bethel, Ohio, Mt. Ver- [non House.
Caswell, Wilfred Harold, B. M. E.,	Bridgton, Mt. Vernon [House.
Cole, Clinton Llewellyn, B. C. E.,	Pleasantdale, Mt. Ver- [non House.
Goodwin, Philip Ross, B. C. E.,	Randolph, Mrs. S. Gee.
Hayes, James Arthur, B. S.,	Randolph, Mrs. S. Gee.
Holley, Clifford Dyer, B. S.,	Farmington, Mrs. L. J. [Hayes.
Lombard, Charles Hutchinson, B. C. E.,	Portland, Mt. Vernon [House.
Mitchell, Frank Henry, B. S.,	Charleston, Miss A. T. [Emery.
Packard, Roscoe Milliken, M. A.,	Orono, Mt. Vernon [House.
Pierce, Louise Norris, B. A.,	Oldtown, Oldtown.
Ricker, Percy Leroy,	Westbrook, Mrs. S. [Gee.
Spaulding, Perley,	Bethel, Vt., Mrs. Jas. [Walton.
Vose, Fred Hale, B. M. E.,	Milltown, N. B., Mt. [Vernon House.

SENIORS

Bartlett, Charles William,	North New Portland, K. S. [House.
Bartlett, Mark Jonathan,	Montville, 209 Oak Hall.
Bartlett, Wales Rogers,	Center Montville, 209 Oak Hall.

Bixby, John Harold,	Anson,	Φ. Γ. Δ. House.
Bixby, Oscar Merrill,	Anson,	Φ. Γ. Δ. House.
Boardman, William Harris	Calais,	Mr. H. H. Finn.
Bogart, Fred Hammond Hanson,	Chester, Conn.,	109 Oak Hall.
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,	206 Oak Hall.
Crosby, Charles Elmer,	Albion,	The Commons.
Davis, Edmund Ireland,	Bangor,	Bangor.
Davis, Fred Merrill,	Lewiston,	203 Oak Hall.
Davis, George Harold,	Auburn,	K. Σ. House.
Faunce, Benjamin Franklin,	Norway,	307 Oak Hall.
Fitzgerald, Elsie Eunice,	Oldtown,	Oldtown.
Folsom, Harold Morrill,	Oldtown,	Oldtown.
Fraser, Gertrude Lee,	Oldtown,	Oldtown.
French, Joseph Edward,	So. Chesterville,	Folsom House.
Goodwin, George Estyn,	Gorham, N. H.,	K. Σ. House.
Hamlin, Emily,	Orono,	Mrs. L. Hamlin.
Harvey, Clifford Dawes,	Lewiston,	Φ. Γ. Δ. House.
Harvey, LeRoy Harris,	Orono,	Mrs. F. L. Harvey.
Howe, Ernest Judson,	South Lancaster, Mass.,	[111 Oak Hall.
Hoyt, Henry Perez,	Fort Fairfield,	A. T. Ω. House.
Keller, Percy Raymond,	West Rockport,	A. T. Ω. House.
Leonard, Herbert Henry,	Orono,	Mr. G. Leonard.
Libby, Wilbert Andrew,	North Gorham,	211 Oak Hall.
Lowell, Frank Holt,	North Penobscot,	Mr. O. T. [Goodridge.
Merrill, Maurice Barnabay,	Stillwater,	Stillwater.
Martin, Bertrand Clifford,	Fort Fairfield,	Φ. Γ. Δ. House.
Martin, Fred Lewis,	Franklin,	106 Oak Hall.
Mitchell, Charles Augustus,	West Newfield,	Φ. Γ. Δ. House.
Nickerson, Percy Lee,	Swanville,	206 Oak Hall.
Pritham, Harry Charles,	Freeport,	205 Oak Hall.
Robinson, Alson Haven,	Orono,	Rev. P. J. Robinson.

Ross, Mowry,	West Woodstock, Conn., Folsom House.
Thompson, Samuel Day,	Bangor, B. Ø. II. 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.
Woodbury, Stephen Edward,	Beverly, Mass., 307 Oak Hall.
Wormell, Ralph Geddes,	Waterville, A. T. Ø. House.

JUNIORS

Adams, Nathan Herbert,	Notch, Folsom House.
Bachelor, Arthur Willis,	North Sebago, 305 Oak Hall.
Barrows, William Edward, Jr.,	Augusta, B. Ø. II. House.
Bartlett, Enoch Joseph,	Monroe, 304 Oak Hall.
Blaisdell, Melvin Merle,	Fort Fairfield, 102 Oak Hall.
Boland, Marion Genevieve,	Worcester, Mass., Mt. Vernon [House.]
Bussell, Edith Mae,	Oldtown, Oldtown.
Butman, James Warren,	Readfield, A. T. Ø. House.
Carr, Harold Malcolm,	Sangerville, K. Σ. House.
Chadbourne, Henry Wilmott,	Mattawamkeag, Main St.
Chase, Nathan Ajalon,	South Paris, Mr. H. Perkins.
Cole, Henry Ernest,	Pleasantdale, 311 Oak Hall.
Davis, Alfred Ricker,	Auburn, K. Σ. House.
Davis, Samuel Prince,	Portland, B. Ø. II. House.
Delano, Edward Warren,	Abbot Village, B. Ø. II. House.
Duren, Harry Elwood,	Richmond, 204 Oak Hall.
Durgan, George Washington, Jr.,	Sherman Mills, 307 Oak Hall.
Dyer, William Norman,	Harrington, A. T. Ø. House.
Eldridge, Walter Hampton,	Bucksport, Folsom House.
Elliott, Wesley Clarendon,	Patten, 111 Oak Hall.
Farrington, Herbert Oscar,	Portland, Φ. Γ. Δ. House.
Fessenden, Lothrop Edwin,	Bridgton, Mrs. C. S. Marsh.
Foster, Arthur Brookhouse,	Beverly, Mass., Mrs. L. J. Hayes.
Freeman, George Leonard,	West Gray, K. Σ. House.
French, Henry Carter,	Rumford Center, 310 Oak Hall.
Gilbert, Eugene Clarence,	Orono, Mr. T. Gilbert.
Greene, James Marquis,	Putnam, Conn., Mr. Wm. Page.

Hamilton, Andrew George,	Orono,	Mr. H. Hamilton.
Hamlin, Horace Parlin,	Orono,	Mrs. L. Hamlin.
Hennessy, Harold Stewart,	Bangor,	B. Θ. II. House.
Holmes, Fred Eugene,	East Machias,	202 Oak Hall.
Johnson, Elbridge Augustus,	Portland,	Mrs. A. Cowan.
Kallom, Frank Winthrop,	South Berlin, Mass.,	A. T. Ω. [House.
Kelly, Burchard Valentine,	Centerville, Mass.,	Main St.
Kneeland, Henry Wilton,	Searsport,	202 Oak Hall.
Knight, Perley Charles,	South Gorham,	Mr. O. T. Good- ridge.
Knowles, Lida May,	Bangor,	Mt. Vernon House.
Lowe, Sumner Sturdivant,	Cumberland,	Mrs. A. Cowan.
Lyon, Alpheus Crosby,	Bangor,	Φ. Γ. Δ. House.
McCarthy, Patrick Edward,	Lewiston,	207 Oak Hall.
Mansfield, Harold Wilder,	Union,	Main Street.
Margesson, Charles William,	Bangor,	Φ. Γ. Δ. House.
Mitchell, Ezra Getchell,	Auburn,	207 Oak Hall.
Moore, Byron Newcomb,	Biddeford,	A. T. Ω. House.
Mosher, Percival Hildreth,	Pleasantdale,	Mrs. Wallace.
Moulton, Frank Augustus,	Limington,	Mr. J. P. Spearen.
Pease, Irving,	Bean's Corner,	Main Street.
Peck, Luther,	Monson, Mass.,	201 Oak Hall.
Pressey, Frank Ethelbert,	Bangor,	Bangor.
Rackliffe, Clinton Nathan,	Easton,	312 Oak Hall.
Rice, Marie Cecilia,	Bangor,	Mt. Vernon House.
Ross, Edwin Bishop,	Bangor,	B. Θ. II. House.
Russell, Roy Elvert,	Livermore,	310 Oak Hall.
Sewell, Herbert Willis,	Wilton,	Φ. Γ. Δ. House.
Silver, Arthur Elmer,	Silver's Mills,	312 Oak Hall.
Stephens, Charles Walter	Oldtown,	Oldtown.
Swasey, Lawrence Mabry,	Limerick,	311 Oak Hall.
Thombs, William Brackett,	Gorham,	A. T. Ω. House.
True, Edwin Stanley,	Portland,	B. Θ. II. House.
Warren, John Clifford,	Westbrook,	K. Σ. House.
Watson, Alvin Morrison,	Portland,	K. Σ. House.
Wheeler, Allen Francis,	Brunswick,	A. T. Ω. House.
Whipple, Albert Lawrence,	Solon,	A. T. Ω. House.
Whittier, Ralph,	Bangor,	A. T. Ω. House.

SOPHOMORES

Baker, Ernest Linwood,	Portland,	301 Oak Hall.
Benner, Archie Ray,	Waldoboro,	Mr. Geo. Thompson.
Blaisdell, Geneva,	Fort Fairfield,	Mt. Vernon [House.
Bradford, Luther Cary,	Turner,	B. Θ. Π. House.
Burns, William Bruce,	Fort Fairfield,	Φ. Γ. Δ. House.
Carr, Cleora May,	Oldtown,	Oldtown.
Chandler, Robert Flint,	New Gloucester,	Φ. Γ. Δ. House.
Chesley, Lloyd Almond,	Oldtown,	Oldtown.
Coffin, Leroy Melville,	Freeport,	Mrs. L. P. Harris.
Cole, Winfield Lee,	Biddeford,	A. T. Ω. House.
Collins, Fred,	Bar Harbor,	K. Σ. House.
Conner, Ralph Melvin,	East Wilton,	Folsom House.
Cooper, Ralph Leonard,	Belfast,	A. T. Ω. House.
Crabtree, Leroy Brown,	Hancock,	K. Σ. House.
Crocker, Henry Kennedy,	Rockland,	B. Θ. Π. House.
Cunningham, Pearl Garfield,	Oldtown,	A. T. Ω. House.
Davis, Rodney Clinton,	Lewiston,	203 Oak Hall.
Dinsmore, Sanford Crosby,	Dover,	B. Θ. Π. House.
Dorticos, Carlos,	Woodfords,	K. Σ. House.
Douglass, Frank Libby,	West Gorham,	Mayo's Block.
Ellstrom, Victor Edwin,	Fitchburg, Mass.,	Mr. Wm. [Page.
Everett, Chester Steele,	Attleboro, Mass.,	107 Oak Hall.
Fitz, Guy Bearce,	Auburn,	Φ. Γ. Δ. House.
Foster, Samuel Joshua,	Bingham,	K. Σ. House.
French, Harold Francis,	Glenburn,	Mr. J. F. Sanford
Gage, Arthur Willard,	Dennisport, Mass.,	Mr. L. P. [Harris.
Goodridge, Oren Leslie,	Orono,	Mr. O. T. Goodridge.
Goodwin, Burton Woodbury,	Berry Mills,	Φ. Γ. Δ. House.
Graves, Sherley Preston,	Northeast Harbor,	Mr. H. W. [Finn.
Hadlock, George Harmon,	Portland,	B. Θ. Π. House.
Harris, Liston LeRoy,	Orono,	Mr. G. L. Harris.
Harris, Philip Howard,	Portland,	B. Θ. Π. House.

Hartford, Edward Goodnow,	Calais,	Mr. H. W. Finn.
Hilliard, John Heddle,	Oldtown,	Φ. Γ. Δ. House.
Hinchliffe, Henry John,	Worcester, Mass.,	Φ. Γ. Δ. House.
Hinckley, Frances Augusta,	Oldtown,	Oldtown.
Jordan, Alfred Carroll,	Casco,	303 Oak Hall.
Kittredge, Claude Abbott,	Farmington,	A. T. Ω. House.
Larrabee, Benjamin True,	Cumberland Mills,	K. Σ. House.
Leary, Thomas Edward,	East Hampden,	306 Oak Hall.
Lewis, Charles Wesley,	Skowhegan,	304 Oak Hall.
Lord, Cecil Arthur,	Bar Harbor,	Middle Street.
Loud, Warren Cornelius,	Caribou,	208 Oak Hall.
McCready, John Hollis,	Houlton,	A. T. Ω. House.
McCullough, Frank,	Lynn, Mass.,	B. Θ. Π. House.
Maxfield, Amy Ines,	Sandypoint, Mt.	Vernon House.
Montgomery, Carroll Leland,	Woodfords,	Φ. Γ. Δ. House.
Mullaney, Roderick Edward,	Bangor,	A. T. Ω. House.
Murphy, Clarence Alexander,	Mansfield, Mass.,	201 Oak Hall.
Norwood, Harry Emery,	Hampden Corner,	306 Oak Hall.
Patrick, Stephen Edmund,	Gorham,	Dr. Whitcomb.
Perry, Estelle M.,	North Castine,	Mt. Vernon [House.
Pestell, Walter,	Lynn, Mass.,	208 Oak Hall.
Porter, Ernest Albee,	Eustis,	K. Σ. House.
Robinson, Veysey Hiram,	Waterville,	Mayo's Block.
Rogers, Herbert Kemp,	Wellfleet, Mass.,	Mr. J. F. [Sanford.
Sawyer, Harry Ansel,	Portland,	211 Oak Hall.
Sheahan, Harold Vose,	Dennysville,	301 Oak Hall.
Simpson, Paul Dyer,	Sullivan,	B. Θ. Π. House.
Sinclair, Karl Augustus,	Malden, Mass.,	303 Oak Hall.
Small, Eben Emmons,	East Thorndike,	Stillwater.
Small, Guy Osman,	Kingfield,	Mrs. Smith.
Small, Silas Gilman,	Lubec,	308 Oak Hall.
Smith, Howard Ausburn,	North Truro, Mass.,	Mr. Fred [Abbott.
Smith, Lewis Eaton,	North Reading,	Φ. Γ. Δ. House.
Soper, Henry Melville,	Oldtown,	Oldtown.
Stewart, George Thomas,	Auburn,	106 Oak Hall.
Stone, Charles Wesley, Jr.,	Milo,	Milford.

Strickland, Roy Elgin,	South Paris,	212 Oak Hall.
Towse, Arthur Roy,	North Lubec,	301 Oak Hall.
Treworgy, Isaac Emery,	Surry,	106 Oak Hall.
Tucker, George Edwin,	Monson, Mass.,	204 Oak Hall.
Usher, Robert Cleveland, Jr.,	Plainville, Conn.,	K. Σ. House.
Wharft, Edward Mansfield,	Danforth,	Φ. Γ. Δ. House.
White, Ralph Henry,	East Machias,	309 Oak Hall,
Whitney, Harvey David,	Auburn,	Φ. Γ. Δ. House.
Wiley, Mellen Cleaveland,	Bethel,	305 Oak Hall.

FRESHMEN

Alden, Carl Howard,	Gorham,	Mr. J. Myers,
Andrews, Guy Clayton,	Gorham,	Mr. O. T. Goodridge.
Averill, Roy Samuel,	Milltown,	Mr. Elijah Webster.
Baker, Robert Clinton,	Taunton, Mass.,	Φ. Γ. Δ. House.
Bassett, Ralph Smith,	Dover,	Oldtown.
Bean, Paul Lenard,	Saco,	A. T. Ω. House.
Bearce, Ira M.,	Hebron,	Mr. J. P. Spearin.
Berry, Edward Robie,	Lynn, Mass.,	B. Θ. Π. House.
Boynton, Walter Melrose,	Damariscotta Mills,	Mrs. [McPheters.
Brann, George Samuel,	Dover,	Bangor.
Breed, Everett Mark,	Brewer,	Mrs. T. Shatley.
Broadwell, Edwin Sherman,	Cleveland, Ohio.,	Prof. J. H. [Huddilston.
Brown, Ernest Carroll,	Gorham,	Mrs. James Walton.
Brown, Horace A.,	Bradley,	Bradley.
Brown, Homer Francis,	Saco,	Mrs. C. S. Marsh.
Buker, Edson Bayard,	Brownville,	Mr. O. C. Dunn.
Campbell, Will Delbert,	East Dixfield,	Mrs. C. S. Marsh.
Case, Albert Deering,	Lynn, Mass.,	A. T. Ω. House.
Chace, Archibald Eastward,	Montclair, N. J.,	A. T. Ω. House.
Chaplin, Carroll Sherman,	Portland,	Φ. Γ. Δ. House.
Chase, Clifford Gray,	Baring,	308 Oak Hall.
Clark, Jerome Borden,	Smithville,	Mr. Wm. Colburn.
Clifford, Edward Clinton	West Falmouth,	Φ. Γ. Δ. House.
Colcord, Lincoln Ross,	Searsport,	K. Σ. House.
Day, Charles Iven,	Damariscotta,	A. T. Ω. House.
Day, Eugene Garfield,	Madison,	112 Oak Hall.

Dorticos, Phillip,	Woodfords,	K. S. House.
Dugan, George Andrew,	Bangor,	Bangor.
Eastman, Thomas Frank,	Ashland, N. H.,	K. S. House.
Farwell, Harry Hancock,	Boston, Mass.,	Mrs. William [Hurd.
Fifield, Fred Victor,	East Eddington,	112 Oak Hall.
Flye, Owen Lovejoy,	Brooklin,	Spaulding House.
Flynt, Roy Horton,	Augusta,	B. O. II. House.
French, George Augustus,	Portland,	Rev. C. E. Lund.
Giles, Clyde Irving,	Skowhegan,	Mr. Geo. Thomp- [son.
Gill, William Everett,	Camden,	Φ. Γ. Δ. House.
Grady, Michael Charles,	Bangor,	Bangor.
Gray, Maurice Lee,	Cape Rosier,	Spaulding House.
Gregory, Herbert Stanley,	Elmira, N. Y.,	Mrs. James [Walton.
Gulliver, Edward Charles,	Portland,	Mr. Geo. Thompson.
Haley, Harry Dennet,	Gardiner,	K. S. House.
Hall, Guy,	So. China,	Mr. Fred Abbot.
Haskell, Roger,	Westbrook,	Mr. L. P. Harris.
Herbert, Thomas Carroll,	Richmond,	104 Oak Hall.
Holmes, Ernest Randall,	Eastport,	A. T. O. House.
Hopkins, Leonard Otis,	So. Framingham, Mass.,	[A. T. O. House.
Hopkins, Ralph Thomas,	Bangor,	B. O. II. House.
Hunt, Fred Howard,	East Thorndike,	Stillwater.
Johnstone, Leslie Ingalls,	Milford,	Milford.
Jones, Henry Neely,	Camden,	Mr. J. P. Spearen.
Jones, Vaughn,	Bangor,	K. S. House.
Kingsbury, Ralph Waldo Emerson,	So. Brewer,	212 Oak Hall.
Lawrence, Leonard Alexander,	Eastport,	Mrs. James Walton.
Leighton, Clifford Henry,	Addison,	Orono House.
Little, Leslie Eugene,	Bucksport,	Mr. Fred Abbott.
Livermore, Scott Page,	Lynn, Mass.,	B. O. II House.
McFadyen, James, Jr.,	Milo,	211 Oak Hall.
McIntire, Walter Draper,	Orange, Mass.,	Mr. O. C. Dunn.
Marsh, Chas. Fred Dudley,	Dexter,	Mr. L. P. Harris.
Millett, Bernard Fearin,	Norway,	Mr. L. P. Harris.
Monk, Holman Waldron,	No. Buckfield,	Mr. J. P. Spearen.

Morse, Frank Leander Staples,	Thomaston, Mr. J. P. Spearen.
Noyes, Harry Warren,	Berlin, N. H., Mr. Fred Abbott.
Olivenbaum, John Emanuel,	Jemmland, Φ. Γ. Δ. House.
Paine, Allen Thatcher,	Brewster, Mass., Mr. Fred [Abbott.]
Parker, Edward Alton,	Skowhegan, K. Σ. House.
Pearson, Ralph Howard,	Guilford, Mr. Elijah Webster.
Perkins, Conner Arthur,	Bucksport, K. Σ. House.
Phinney, Alverdo Linwood,	Cash's Corner, Fitzgerald [House.]
Porter, Karl Byron,	Oldtown, A. T. Ω. House.
Quimby, John Herman,	Goodale's Corner, Mr. Fred [Abbott.]
Richardson, Roy Henry,	Norwell, Mass., Mr. J. P. [Spearen.]
Ricker, William Jewett,	Turner, Mr. J. P. Spearen.
Sampson, Charles Henry,	Gorham, Mr. O. T. Goodrich.
Sawyer, James Herbert,	Saco, A. T. Ω. House.
Scott, Walter Erwin,	Dexter, Φ. Γ. Δ. House.
Small, Alvah Randall,	So. Portland, Fitzgerald House.
Small, Lottie Luella,	Auburn, Mt. Vernon House.
Smith, Elmer Garfield,	Portland, K. Σ. House.
Smith, Leroy Clifton,	East Exeter, Mrs. Jas. Walton.
Snell, Roy Martin,	Lagrange, 311 Oak Hall.
Soderstrom, Godfrey Leonard,	Hartford, Conn., Φ. Γ. Δ. House.
Soule, Seth Hersey,	Gorham, Mr. J. Myers.
Stanley, Byerly S.	McKinley, Mr. Warren Reed.
Staples, Joseph Henry,	Bangor, Bangor.
Talbot, Fred William,	Andover, Mr. J. P. Spearen.
Talbot, James Rich,	East Machias, 309 Oak Hall.
Taylor, Alec Gladstone,	No. Sullivan, B. Θ. II. House.
Taylor, Elliot Williams,	Hyannis, Mass., Mrs. Wm. [S. Hurd.]
Taylor, Howard Smith,	Bangor, K. Σ. House.
Taylor, Thomas Francis,	Bangor, Bangor.
Terry, Orange Fanning,	Bridgeport, Conn., B. Θ. II. [House.]
Tucker, John Voden,	Stillwater, Stillwater.
Turner, Roland Lee,	Boothbay Harbor, A. T. Ω. House.



MT. VERNON HOUSE.

Webber, Mary Frances,	Bangor,	Bangor.
Webster, Francis Howe,	Stockton Springs,	Mr. J. P. [Spearen.
Weeks, Carl Wellington,	Masardis,	Mrs. C. S. Marsh.
White, Alphonso,	North Sebago,	Mr. Warren Reed.

SHORT PHARMACY COURSE

SOPHOMORES

Allen, Roy Parker,	North Sedgwick,	Mr. Charles [Crowell.
Berry, Richard Henry,	Montville,	Mr. Charles Crowell.
Hinchliffe, Henry John,	Worcester, Mass.,	Φ.Γ.Δ. House,
Sanford, John Foy,	Lewiston,	Park St.

FRESHMEN

Buckley, William Wallace,	Winchendon, Mass.,	107 Oak [Hall.
Burns, Frank Percy,	Westbrook,	201 Oak Hall.
Clarke, Ralph E.,	Freeport,	Mr. L. P. Harris.
Leighton, Percy Augustine,	West Cumberland,	Stillwater.
Pierce, James Albert,	Stockton Springs,	Mr. George [Thompson.
Plummer, Merrill,	Addison,	Mr. John Lacy.
Tate, Walter Maurice,	South Corinth,	Mrs. Strout.
Woodman, Benjamin Jordan,	Westbrook,	207 Oak Hall.

SPECIAL STUDENTS

Campbell, Will Delbert,	East Dixfield,	Mrs. C. S. Marsh.
Cunningham, Pearl Garfield,	Patten,	A. T. Ω. House.
Gray, Lena Dillingham,	Old Town,	Old Town.
Haynes, Evangeline M.,	Old Town,	Old Town.
Jones, Grace Mutell,	Orono,	Main St.
King, Fred Wilber,	Charleston,	Φ. Γ. Δ. House.
Lewis, Charles Wesley,	Skowhegan,	304 Oak Hall.
Peterson, Emelia,	Scarboro Beach,	Mr. Fred Gil- [bert.
Russell, Maurice Wheeler,	Augusta,	B. Θ. II. House.

Scoville, Sorensen L.,	South Ohio, N. S.,	B. O. II. [House.
Simmons, Melvin Harry,	Hallowell,	Miss A. T. Emery.
Webber, Fred Garfield.	Orouo,	Pine Street.

SHORT COURSES IN AGRICULTURE

Abbott, Linn Boynton,	Cumberland Mills,	Mrs. T. [Shatney.
Bailey, Sanford Eugene,	Webber,	Mrs. T. Shatney.
Chubbuck, Alfred Seeley,	East Fairfield,	Mrs Martin.
Doe, Arthur William,	Presque Isle,	Mrs. T. Shatney.
Downing, Herbert Plummer,	Ripley,	Mrs. C. S. Marsh.
Ellms, Ralph,	Dexter,	Mrs. T. Shatney.
Farnsworth, Omar Libbey,	Caribou,	Mrs. T. Statney.
Fenderson, Garnett Tibbetts,	South Stetson,	Mr. Wm. Page.
Harvey, Charles Irving,	Waterford, Vt.,	Mrs. T. Shatney.
Hobert, Clifton Robert,	Stillwater,	Stillwater.
Hodge, Sidney Fisher,	North Dixmont,	Mrs. James [Walton.
Hurley, Martin Farncis	Bangor,	Bangor.
Jordan, Edwin Roscoe,	Stillwater,	Stillwater.
Knowles, Roland Foster,	Victor,	Mrs. T. Shatney.
Leavitt, Nellie Louise,	Skowhegan,	Prof. Walter Flint.
Patch, Charles Albert,	West Newfield,	Mrs. T. Shatney.
Peary, Charles,	Phillips,	Mrs. Martin.
Percival, Willis Clarence,	Owen,	Mrs. T. Statney.
Skillings, Frank Elbertis,	Vassalboro,	Mr. Wm. Page.
Wells, Charles Nelson,	Minot,	Horticultural Building.
White, Edward Libby,	Bowdoinham,	Mrs. T. Shatney.
Whitmore, Horace Chauncey,	Hampden,	Bangor.

STUDENTS IN THE SCHOOL OF LAW

THIRD YEAR

Butler, Ernest Clifford,	Skowhegan,	83 Somerset Street.
Butterfield, Benjamin Franklin,	Danforth,	4 Spring Street.
Foster, Nathan Grant, M. A.,	Webb,	9 Boynton Street.

Colby College.

Jonah, Edwin Bruce,	Eastport,	36 Court Street.
Plumstead, Frank, B. A.,	Wiscasset,	265 Main Street.
<i>Bates College.</i>		
Thurlough, Harry Harding,	Litchfield Corner,	65 Summer [Street.
Weatherbee, Albert Washington,	Bangor.	198 Broadway.

SECOND YEAR

Dunn, Patrick Henry,	Bangor,	North Bangor.
Higgins, Morris Prescott,	Orrington Center,	Brewer.
Lord, Henry,	Bangor,	79 Exchange Street.
McKay, Malcolm,	Scotsville, Lake Ainslie, N. S.,	43 First Street.
O'Halloran, James,	Bangor,	74 Jefferson Street.
Ring, Charles,	Lubec,	65 Summer Street.
Ritter, George William,	Monson, Mass.,	50 Charles St.
Robinson, William Henry,	Bangor,	74 Jefferson Street.
Selkirk, Robert William,	Wilder, Vt.,	265 Main Street.

FIRST YEAR

Anderson, Thomas Alexander,	Hartland,	27 Forest Avenue.
Bennett, Waldo Horace,	Newport,	The Lowder.
Fish, Charles Henry, Jr.,	Bangor,	65 Sumner Street.
Geary, Thomas Reardon,	Whitneyville,	83 Somerset St.
Greeley, Harold Dudley,	Minneapolis, Minn.,	41 Summer [Street.
Holman, Charles Vey,	New York City,	88 Broadway.
<i>Harvard College.</i>		
Hopkins, Fred Weston,	Bangor,	63 Sixth Street.
Loud, Herbert Spencer,	Round Pond,	9 Boynton Street.
McCormick, Edward Stanley,	Island Falls,	159 Main Street.
McQuillan, Hugh Dean,	Portland,	9 Boynton Street.
Mudgett, Ulysses Grant,	Hampden,	Hampden,
Murray, Edward Patrick,	Bangor,	190 York Street.
Osgood, Burt Stirling,	Kingman,	65 Summer Street.
Pickard, Herbert Spencer,	Bangor,	117 Exchange Street.
Putnam, Varney Arthur,	Danforth,	65 Summer Street.
Reid, Charles Hickson,	Bangor,	60 Lincoln Street.

Ross, Harry Francis, <i>Harvard College.</i>	Bangor, 144 Exchange Street.
Thombs, George Warren,	Monson, 65 Summer Street.
Violette, Nil Louis,	Van Buren, 56 Railroad Street.
Winn, George Hayes,	Lewiston, 43 First Street.

SPECIAL STUDENTS

Merrill, John B.,	Bangor, 26 Jefferson Street.
Mitchell, Adnah Jones,	Augusta, 164 Ohio Street.

POST GRADUATE STUDENT

Price, Arthur Wellington, L.L.B., Bangor, Morse-Oliver Building.

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