

# MAINE STATE LEGISLATURE

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# Public Documents of Maine:

BEING THE

## ANNUAL REPORTS

OF THE VARIOUS

# Public Officers *and* Institutions

FOR THE YEAR

1892.

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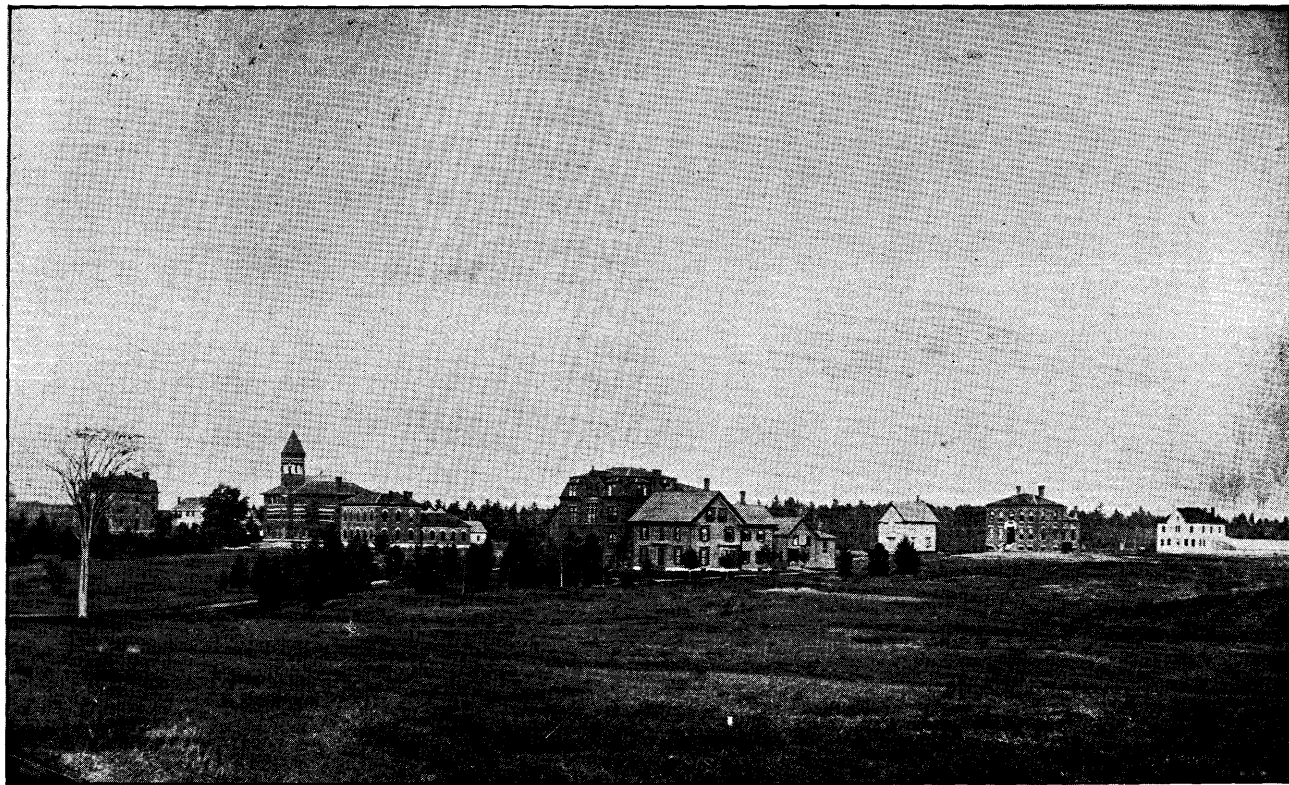
VOLUME II.

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AUGUSTA :

BURLEIGH & FLYNT, PRINTERS TO THE STATE.

1892.



OAK HALL

BOARDING HOUSE.

WINGATE HALL.

CHEMICAL LABORATORY.

COBURN HALL.

PRESIDENT'S HOUSE.

SOCIETY HALL.

EXPERIMENTAL STATION.

HORTICULTURAL HALL.

PRINCIPAL BUILDINGS.

ANNUAL REPORTS

OF THE

TRUSTEES, PRESIDENT AND OTHER OFFICERS

OF THE

State College of Agriculture

AND THE MECHANIC ARTS.

ORONO, ME., 1891.

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Published agreeably to a Resolve approved February 25, 1871.

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AUGUSTA:

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## STATE OF MAINE.

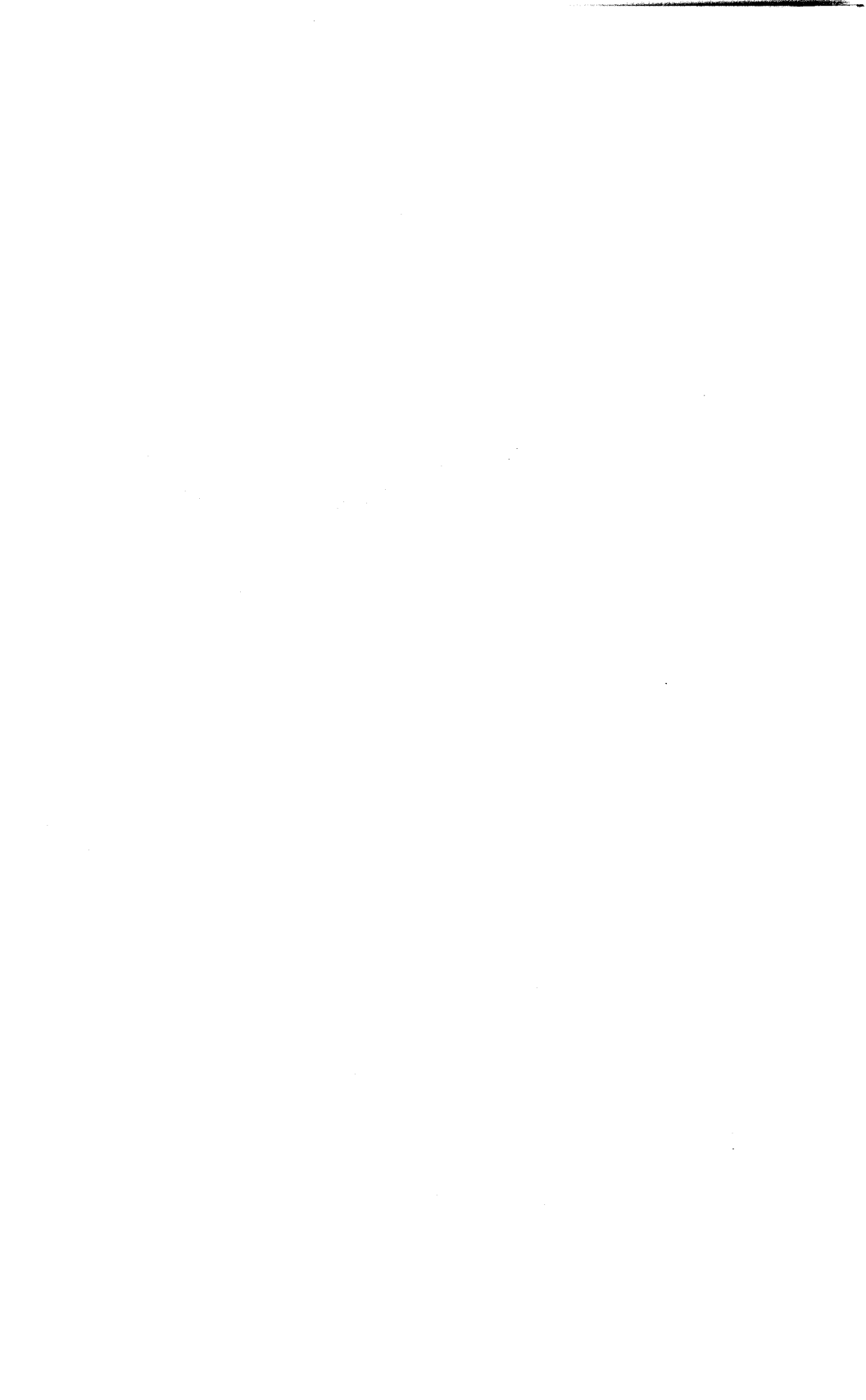
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*To His Excellency, the Governor and the Honorable Council:*

The trustees hereunto submit the annual reports of the President, Professor of Agriculture, and other members of the Faculty together with the report of the Treasurer of the State College of Agriculture and the Mechanic Arts.

R. B. SHEPHERD,  
*President Board of Trustees.*









WINGATE HALL.

## PRESIDENT'S REPORT.

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*To the Trustees of the Maine State College of Agriculture and the Mechanic Arts:*

GENTLEMEN :—So many material changes have been wrought on the college campus since the issue of the last report, that a condensed statement of progress made can hardly fail to be of interest, and, as matter of college history, of value.

### MATERIAL ADVANCES FOR THE YEAR 1891.

The building newly constructed which holds the most prominent place is Wingate Hall. This building designed principally for the departments of engineering will serve also other important purposes. It will be first available for classes in the spring term of 1892.

As arranged, the first and third floors are assigned for instruction and drawing in the departments of civil and mechanical engineering, while the second floor furnishes two recitation rooms, a physical apparatus room, a physical lecture room and a commodious room for the Young Men's Christian Association.

The new dairy building with its complete equipment for the manufacture of butter and cheese by approved modern methods, is a valuable acquisition to the Department of Agriculture. Its rooms are well arranged and ample for purposes of dairy instruction.

The horticultural building connected with the plant-house, with its photographic room and other rooms especially adapted to the needs of the horticultural department, cannot fail to

prove of large service, by furnishing facilities both for instruction and for research.

These buildings, now only briefly referred to, will receive more specific notice in the appropriate department reports.

To the mechanical shop an addition has been made of a suitable room for a foundry. Hereafter the casting of metals will constitute a part of the shop instruction.

In Oak Hall, the boiler used for heating the building has been changed in location to the northwest corner of the cellar in order to secure larger draft. As reset, it proves to be much more efficient than before. In this Hall, three bath rooms have been fitted up and are greatly appreciated by the students occupying the building.

The painting of the halls and some of the rooms of the chemical laboratory has largely improved the interior of this building. From its cellar the old boiler which had become unsafe, has been removed and a new boiler adequate for the heating of the building has taken its place.

Considerable improvements found necessary on the foundation of the house occupied by the Q. T. V. Society have been made. The tool shed provided for by the last legislature has been constructed. The cases for the department of Natural History, for which provision was also made, are contracted for and will soon be set up in the Museum. The water tower, designed to furnish pressure sufficient for fire protection for the principal college buildings, is in process of erection. Before this report shall be printed this new tower will probably be in use for storage of the soft water pumped from the Stillwater river for the college and the experiment station.

Among the improvements at many points on the college campus, those in landscape gardening by Prof. Munson are entitled to special notice. The improvement in the grounds about the experiment station building are especially marked.

Among the advances within the year, of large value, mention should be made of reasonable additions to the books of the library, very considerable additions to the machinery in the mechanical shop and most important additions to the stock

of apparatus in all departments. Among the valuable importations from Europe, especial reference should be made to sets of classic models for use in teaching comparative anatomy and veterinary science.

#### NEW INSTRUCTORS.

In February, 1891, Welton M. Munson, B. S., a graduate of the Michigan Agricultural College, and for two years assistant to Prof. Bailey of the Experiment Station, Cornell University, entered upon duty as Professor of Horticulture and Landscape Gardening. His assistant has been Mr. Leo B. Plummer, a former student of the Michigan Agricultural College.

In August, 1891, Horace M. Estabrooke, M. S., class 1876, Maine State College, entered upon duty as Professor of Rhetoric and Modern Languages, and at the same time, James L. Stevens, Ph D., entered upon duty as Professor of Physics. Prof. Stevens is a graduate of Rochester University and a recipient of the earned degree of Doctor of Philosophy from Syracuse University. David W. Colby, B. S., class of 1887, Maine State College, has been chosen assistant to the department of chemistry and has served in this capacity one term.

Mr. G. M. Gowell has been appointed instructor in practical agriculture and Prof. James Cheesman, Secretary of the New England Dairymen's Association, has been employed temporarily to give instruction in dairying.

The term of assignment of Lieut. Everard E. Hatch, 18th Infantry, U. S. A., as Professor of Military Science and Tactics at this college expired July 1, 1891. His successor is Lieut. Mark L. Hersey, 9th U. S. Infantry, who entered upon duty at the above named date. Besides performing his military duties, Lieut. Hersey kindly gives instruction in the French language and Literature without extra compensation. Professor W. F. Wentworth of Boston, Mass., gave for the fourth time, the necessary elocutionary drill to the several classes preparatory to commencement.

With the additions that have been made, the Faculty is strongly organized for the work of the several departments, yet not too strongly organized, considering the highly specialized instruction given by this institution.

#### REVISION OF THE COURSES OF STUDY.

The several courses of study have undergone careful revision and enlargement. They have been conformed to the more complete equipment and organization of the college.

The course in Science and Literature, which heretofore has appeared as a modification of the course in Agriculture, has been definitely written out and will hereafter appear as a separate course. In its present form, it is well suited to students desiring a general education or to those desiring to become teachers. It constitutes also a good course of study for young women. The more technical courses have been so arranged as to secure the largest amount of time for practical work with the least loss of recitations. Under this plan, students in agriculture, during the autumn just past, have devoted whole days in the dairy building, receiving special instruction and attending to the manufacture of butter and cheese. Under this plan, the civil engineers of the Junior class, without interference with the requirements of the classroom, have had the benefit of two full days each week for field work with engineering instruments under the immediate oversight of an instructor. The cases cited are sufficient for illustration.

#### SPECIALIZED INSTRUCTION AND SPECIAL COURSES.

The specialized instruction given by this institution requires a relatively large teaching force. After the first year, the larger part of the work of classes is carried on in divisions according to the course selected. Nearly all the practical educational work by divisions involves individual instruction on the part of the teacher. This method, and in general the laboratory method of instruction which is here largely followed, and which is of the highest service to the student can

only be successfully carried on by a fully organized corps of instructors. It should be understood by all seeking an education at this college and by all interested in it, that it is now definitely organized, in all its departments, with reference to the demands of such a system of instruction.

Throughout its entire history, the college has made provision for special courses of instruction, courses usually made up by selecting from the studies taught in the entire curriculum, such ones as the applicant is prepared to pursue successfully. These special or partial courses are very elastic, and while they are not to be recommended in place of full courses, they frequently meet a want felt by students who are not able to devote to study the time required to obtain a degree. In addition to the regular courses and special courses made up of elective studies, two short courses in Agriculture have been definitely written out within the past year and appear for the first time this year in the college catalogue. It is hoped that these latter courses may also meet a definite want.

#### COMMENCEMENT.

The Twentieth Annual Commencement was observed in accordance with the following programme :

1891. June 20, Saturday 7.30 P. M., Sophomore Prize  
Declamations.
- 21, Sunday, 7.30 P. M., Baccalaureate Services.  
Discourse by Rev. Amory Battles of  
Bangor.
- 22, Monday, 7.30 P. M., Junior Exhibition.
- 23, Tuesday, 9.00 A. M., Meeting of Trustees.  
1 P. M. to 4 P. M., College Halls  
open to visitors.  
1.30 P. M., Military Exercises.  
8.00 P. M., Concert.
- 24, Wednesday, 9.30, A. M., Commencement  
Exercises.  
3.00 P. M., Meeting of Alumni.  
8.00 P. M., President's Reception.

For excellence in declamation, Sophomore class, the Prentiss Prize was awarded to Miss Lizzie Louise Smith of Veazie; George Ansel Whitney of Madison and Charles Prentiss Kittredge of Milo receiving honorable mention.

For excellence in composition, Junior class, the Prentiss Prize was assigned to Harry Mellen Prentiss of Brewer, writer of essay on "Manual Training in Education," honorable mention being made by the awarding committee of the essay entitled "Science of Teaching" by William Hacker Atkinson of Brunswick and of the essay written by George Frederic Atherton on "American Schools."

For best agricultural essay, the Libbey Prize was awarded to Henry Vaill Starrett of Warren, writer of essay on "Rotation of Crops."

For highest standing, course in agriculture, Senior year, the Franklin Danforth Memorial Prize was assigned to Henry Vaill Starrett of Warren who had made an average rank of 93.8.

The prizes are given respectively by Mrs. H. E. Prentiss of Bangor, Hon. Samuel Libbey of Orono and Edward F. Danforth, Esq. of Skowhegan. The "Kidder Scholarship" amounting to thirty dollars a year in aid of some member of the Junior class was announced, the name of the recipient not being made public.

Through the liberality of a lady friend of the college, awards for the highest standing in "scholarship and deportment" in the Sophomore and Freshman classes have been made for several years. In 1891, the recipient of this award in the Sophomore class was Charles Henry Gannett of Augusta, who maintained an average rank of 95.2; James Almore Alexander of Richmond, rank 94.5, and Charles Clark Murphy of Hampden, rank 94.4, receiving honorable mention.

In the Freshmen class, the recipient of the award was Edward Butler Wood of Camden, whose rank was 96.9, honorable mention being made of Edward Henry Cowan of

Orono, rank 95.0, and of Charles French Bradford of Union, rank 94.3.

The names of members of the Senior class receiving degrees and the titles of their essays are herewith given.

#### BACHELOR'S DEGREE.

*Degree of Bachelor of Science*—Course in Agriculture: Wallace Ryder Farrington, Cape Elizabeth, Agricultural Journalism; Henry Vaill Starrett, Warren, Rotation of Crops.

*Degree of Bachelor of Science*—Course in Chemistry: Edmund Clark, Bethel, Silver Made from Clay; Charles Clayton, Bangor, Labor Associations; Cyrus Hamlin, Bangor, Bacteria; Charles Herbert Kilbourne, North Waterford, Dyeing and Printing; Fred Charles Moulton, Hiram, Adulteration of Spices and Condiments.

*Degree of Bachelor of Civil Engineering*—Ralph Jesse Arey, Hampden, Building Materials; William Melvin Bailey, Malden, Mass., Methods of Heating; William Rowe Farrington, Portland, Development of Railroads in the United States; Herbert Austin Hall, Shapleigh, Water Supply; Prescott Keyes, Jr., Litchfield Corner, Metallic Currency; William Nickels Patten, Cherryfield, Origin and Growth of Engineering; Charles Norton Taylor, Hampden, The Electric Street Railway; George Edward Thompson, Orono, Reading.

*Degree of Bachelor of Mechanical Engineering*—John Henry Flanagan, Rockland, Corruption in Politics; Joseph Colburn Graves, Orono, Use of Special Machinery; Robert William Lord, Skowhegan, The Doom of the American Indian; Hugo Gustave Menges, Bangor, Electrical Measurements; John White Steward, Skowhegan, Electricity versus Steam; William Alton Valentine, Bethel, The Mechanic and His Work.

#### MASTER'S DEGREE.

*Master of Science*—Alice Albur (Hicks) Black, Portland, Thesis, The Land Mammals of New England; John Wood



Hatch, Hampton, Va., Thesis, An Outline of Study in the Sciences as Related to Agriculture.

*Civil Engineer*—Dudley Elmer Campbell, Brunswick, Thesis, Some Details of Pipe Sewer Construction.

*Mechanical Engineer*—Oscar Howard Dunton, Melrose, Mass., Thesis, Designing of Corliss Engines; Claude Lorraine Howes, Lynn, Mass., Thesis, Electric Light Stations.

The degree of Civil Engineer was conferred also upon Loomis Farrington Goodale, St. Joseph, Mo., non-graduate of the class of 1879.

#### PAST RECORD.

The college has given instruction in the past to 680 students, of whom 349 have pursued full courses and have been graduated and 331 have pursued partial courses, ranging in time from a few months to three and a half years. Of the non-graduates 303 are now living, nearly all of whom are occupied in honorable and gainful pursuits, many holding positions of large responsibility for which their study at this college has been the principal preparation. Of the graduates 330 are now living, occupied as shown in the following table of grouped employments.

#### AGRICULTURE AND ALLIED INDUSTRIES.

Farmers .....	24
Professors of Agriculture.....	2
Directors of Agricultural Experiment Stations.....	2
Chemists to “ “ “ .....	5
Veterinary Surgeons .....	3
Nurserymen .....	2
Florist .....	1
Assistant U. S. Bureau of Animal Industry.....	1
Editor of Agricultural Paper .....	1
Total .....	41

## CIVIL ENGINEERING AND ALLIED INDUSTRIES.

Civil Engineers.....	68
Professor Civil Engineering .....	1
Instructor " " .....	1
Superintendent Railroad .....	1
Total.....	<u>71</u>

## MECHANICAL ENGINEERING AND ALLIED INDUSTRIES.

Mechanical Engineers...	14
Draughtsmen .....	22
Manufacturers .....	9
Architects .....	3
Professor Mechanical Engineering .....	1
Instructors Mechanical Shop .....	4
Mining Engineers.....	2
Electrical Engineering.....	2
Total.....	<u>57</u>

## EDUCATIONAL WORK.

Teachers .....	29
Professors and Instructors in Colleges.....	14
Superintendent of Schools.....	1
Total.....	<u>44</u>

## PROFESSORS.

Lawyers .....	15
Physicians.....	8
Clergymen .....	3
Total.....	<u>26</u>

## BUSINESS.

Merchants .....	10
Clerks.....	6
Traveling Salesman .....	3
Bankers.....	2
Bank Cashiers.....	2
Total.....	<u>23</u>
Miscellaneous employments.....	68

It thus appears that of the 330 living graduates, 12 per cent are engaged in agriculture and allied industries, 21 per cent in civil engineering, 17 per cent in mechanical engineering, 13 per cent in educational work, 8 per cent in professions, 7 per cent in business and the remaining 21 per cent mostly recent graduates, in miscellaneous pursuits.

## DEATH OF TWO STUDENTS.

About the first of March, 1891, Mr. Judson B. Blagden of Bluehill, died after a brief illness near Portland, Maine, where he had been teaching a winter school. Early in September last, Mr. Charles F. Bradford died at his home in Union after a sickness of about two weeks. Both were members of the present Sophomore class. Both were very worthy young men, of fine ability, who gave promise of large future usefulness. They had won a high place in the regard and esteem of all who knew them.

Their memory is tenderly cherished by their mates and by all connected with the college.

## MISCELLANEOUS ITEMS.

During the autumn, a considerable correspondence has been carried on with the principals of those academies which are not fitting schools for other colleges and with principals of high schools in different parts of the State—institutions which would naturally be expected to be fitting schools for

the State College. The cordial responses received have been sources of encouragement, indicating, as they do, that a goodly number of young men are preparing to enter future classes in this college.

While the resources of the college library have been, only in part, utilized, the library has been much more useful the past year than ever before. The additions to its books have largely increased its value for both student and instructor.

The founding of a scholarship by Mr. F. E. Kidder of Denver, Colorado, is a movement in the right direction, a substantial form of remembrance of his *alma mater*, worthy of imitation. The "Kidder Scholarship" yields thirty dollars per annum in aid of a meritorious student.

The encampment of the Coburn Cadets, for a few days at Fort Knox, constituted an outing greatly appreciated by the participants and gave an opportunity for military training and discipline such as the ordinary military exercises can hardly afford.

The illustrated circular of the college just issued cannot fail to give the reader a much more *real* conception of the excellent facilities and educational advantages now offered by this institution than a catalogue or report can possibly convey.

The "Cadet" is ably conducted, manifests a spirit of devotion to college interests and is worthy of generous patronage and support.

The Young Men's Christian Association has been a positive force for good throughout the year. When established in its new quarters in Wingate Hall, its influence may be expected to be still more potent and beneficent.

Without a formal plan, the college is doing quite a work in the nature of that involved in "University Extension," by supplying for farmers' institutes and other bodies lecturers who present and discuss topics of a truly educational character.

#### TIME OF BEGINNING OF AUTUMN TERM.

For several years the time of commencing the autumn term has seemed unfavorable. The object of beginning this term

early in August has been to secure a long winter vacation which could be utilized by students in teaching with little or no interruption of their college work. In recent years, however, the opportunities for young men to secure remunerative summer employment have greatly increased in this State. The question consequently arises, whether a longer summer vacation and a shorter winter vacation in which less dependence shall be placed on teaching as a means of earning money, may not be more favorable for all concerned.

After mature consideration of the subject, the Faculty desire to recommend that, hereafter, the first term of the college year commence on the Tuesday nearest to the first day of September and that the length of the term continue as now, on the average, sixteen weeks. This change would bring the close of the autumn term a few days before Christmas and would give a winter vacation of about six weeks, or in other words, it would lengthen the summer vacation four weeks and shorten the winter vacation by the same amount of time.

It is believed that the advantages would more than compensate any disadvantages which might arise in consequence of the change.

#### EQUIPMENT, PRESENT CONDITION AND OUTLOOK.

Very moderate estimates make the value of the college buildings, \$180,000; apparatus, \$25,000; library, \$10,000; farm tools and stock, \$20,000; all aggregating, \$235,000.

The bounty of the national government, supplementing the receipts from the endowment fund and the aid of the State enables the college to make adequate provision for instruction in the different departments.

Though the methods that have been recently adopted of making the advantages and facilities now offered by the college, widely known in the State, there is every reason to believe that, in the near future, these advantages will be shared by as many students as can be received.

The past year has been one of great activity on the college grounds in the way of material changes and progress.

With all the buildings completed for which funds were provided by the last legislature, and with generous additions to the stock of apparatus in every department, we may look forward to a period in which the energies of instructors can be more uninterruptedly devoted to the requirements of the class-room and to the demands which a system of progressive teaching must necessarily make upon them.

#### COLUMBIAN EXPOSITION.

An effort is making to secure from the educational institutions of this country such an exhibit at the Columbian Exposition as shall be truly representative. From the nature of much of the work carried on by the land-grant colleges, an exhibit is not difficult to arrange. Drawings and models of shop-work can be easily and quite inexpensively prepared for exhibition. A little reflection on the subject will doubtless disclose the way, to make a creditable representation of the work in all departments of the college. In order that this college may act in harmony with kindred institutions in preparing a reasonable and representative exhibit of its work, I would recommend that this subject receive early attention, and that the moderate amount of money necessary to carry out this purpose, be assigned for it.

#### CONCLUSION.

For definite information concerning the farm, the horticultural department, and the experiment station, reference is made to the reports of the officers respectively in charge.

Specific reports from the departments of instruction in which only slight changes have occurred within the year have not been deemed necessary. Reports from other departments are submitted.

It is pleasant to be able to state that throughout the year a spirit of manliness and of consideration for others has pre-

vailed among the students, a spirit worthy of the highest commendation.

I desire also to bear testimony to the constant thoughtfulness and kindness manifested by my associates in the Faculty.

The year 1892 is the twentieth since the graduation of the first class. The next Commencement would seem to be a fitting occasion for a general reunion of all the classes. Such a meeting has been voted by the Alumni Association.

Inasmuch as the original "Wingate Hall" was the first hall erected on the college campus and hence the building of largest historic interest, I would suggest that the dedication of the new hall, which takes its place, occur on Commencement week when the alumni can be present, and that ceremonies of dedication be arranged commensurate with the importance of the building and of the purposes to which it is to be devoted.

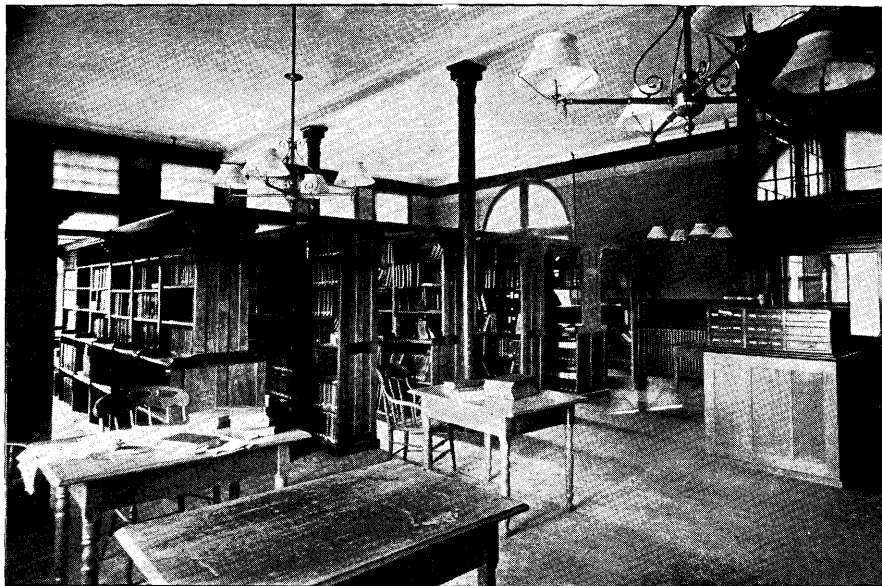
In conclusion of this report, it is only necessary to add, that, to those who have zealously labored for the prosperity of the college in the past, it is gratifying to have occasion to believe, that, from the vantage ground now gained, a like steadfastness of purpose and earnestness of effort in its behalf on the part of all who have to do with its affairs, will secure for it a still larger measure of prosperity in the future.

Respectfully submitted,

M. C. FERNALD, *President.*







LIBRARY.

## Librarian's Report.

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*President M. C. Fernald:*

During the past year the following additions have been made to the library :

General works.....	29 vols.
Philosophy.....	8 “
Sociology.....	56 “
Public documents.....	30 “
Language.....	14 “
General science.....	19 “
Mathematics.....	13 “
Astronomy.....	11 “
Physics.....	33 “
Chemistry.....	10 “
Geology.....	20 “
Palaeontology.....	6 “
Botany.....	12 “
Zoology.....	8 “
Useful arts, general.....	27 “
Medicine.....	7 “
Engineering.....	25 “
Agriculture....	194 “
Chemical technology, etc.....	9 “
Literature.....	71 “
Travel.....	7 “
Biography.....	6 “
History.....	31 “
	<hr/>
	646 “

This makes 6,338 volumes in the general library. The experiment station has 518 volumes which are kept in the library room, making a total of 6,856 volumes accessible to the students.

The volumes added during the past year have been obtained as follows: by purchase, 315; binding, 119; gift, 212; total, 646. There are also 1139 pamphlets in the library at present. The number of pamphlets is a fluctuating one, as whenever there are enough on any one subject to make a volume of reasonable size, they are bound.

The use made of the library by students during the past year, has been fair.

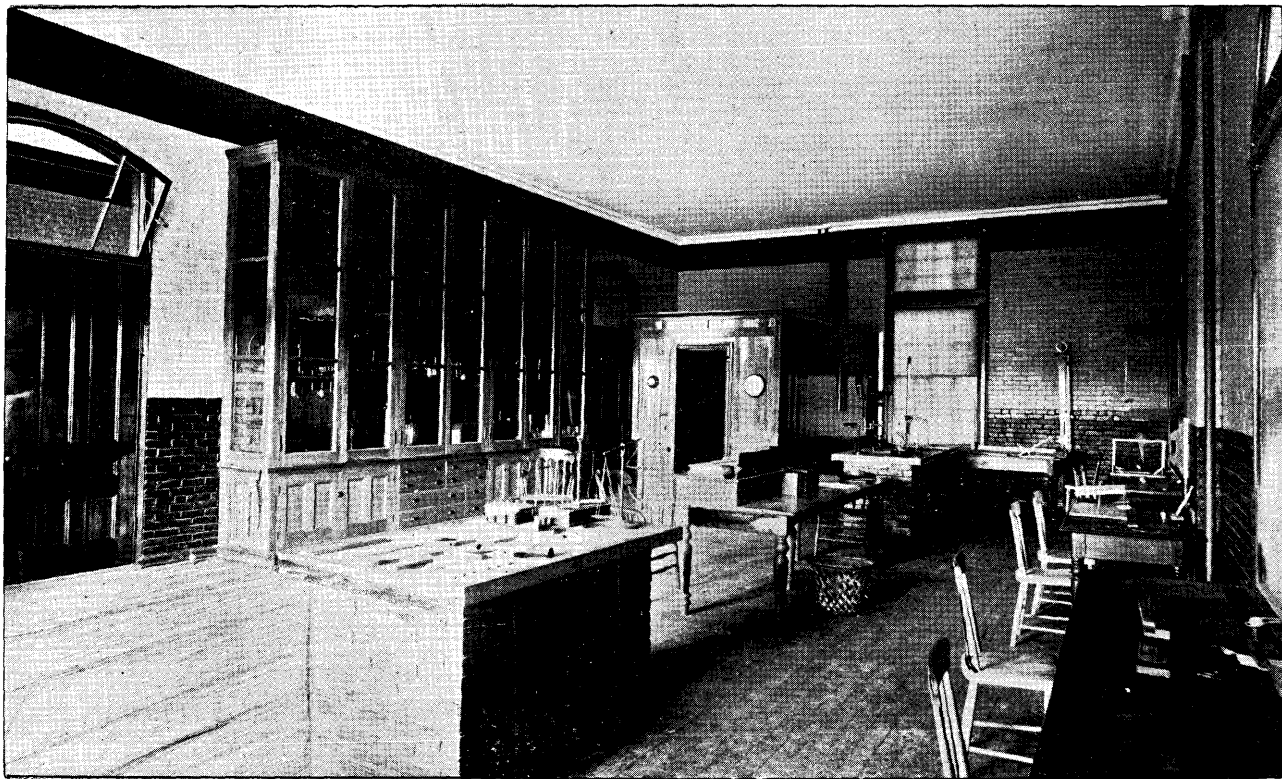
I would recommend that as large an appropriation as is practicable be made for books, as the library needs much building up in all departments; a large proportion of the technical books in the library are so old as to be of but very slight practical value. The better the library is equipped the greater the use that will be made of it.

Respectfully submitted,

HARRIET CONVERSE FERNALD,

*Librarian.*





PHYSICAL LABORATORY.

## Department of Physics.

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*President M. C. Fernald:*

SIR: Having been elected to the professorship of Physics last spring, I entered upon my duties at the opening of the fall term, August 4, 1891. During the past term I have conducted an exercise in the class room each day, and in the Physical Laboratory four afternoons per week.

In the class room we have completed the following subjects: General Laws and Properties, Mechanical Powers, Liquids, Gases, Sound. The first four of these divisions were studied with the use of Atkinson's Ganot's text-book while Sound was given by lectures. The degree of interest manifested by the students and their proficiency in the work has been, as a whole, highly satisfactory to me.

In the Laboratory the students have given their time largely to gaining familiarity with various instruments and facility in their use. Good results have been secured with the spherometers, verniers, micrometer, cathetometer, balances, hydrometers, Atwood machine, hook gauge; apparatus for testing laws of pendulums, friction, strength of material, cohesion, relative density, centre of gravity, moments, pressure of gases, etc.

I have found the department well equipped for carrying on a series of experiments through the Sophomore year. It is, however, desirable that provision be made for advanced work in physics, especially along the line of electricity, for those students in the upper classes who may elect to take it.

The quarters in Wingate Hall, although somewhat remote from the laboratory, are in every way suited to my requirements as lecture and apparatus rooms.

Permit me to say in conclusion that my work, while actually pleasant, has been rendered especially so by the uniform courtesy which I have received from the President and Faculty.

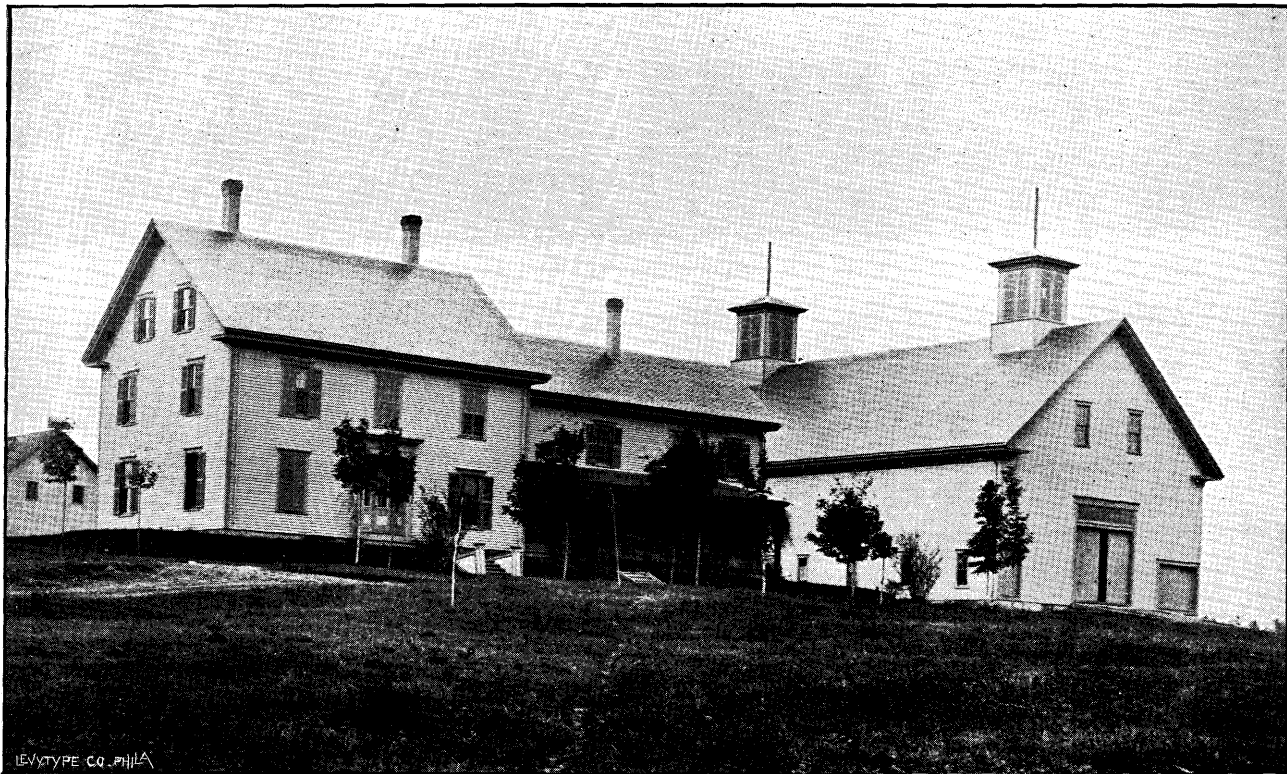
Respectfully submitted,

JAMES S. STEVENS,

*Professor of Physics.*







FARM BUILDINGS.

## Department of Agriculture.

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*President M. C. Fernald:*

With the improved financial condition and the consequent development of the college in all of its lines of educational work, the facilities for giving instruction in Agriculture have been greatly increased.

A Professor of Horticulture and Landscape Gardening has been elected, and, during the past season, agricultural students have received a thorough course of instruction in market gardening and fruit culture. This work has been carried on by means of lectures, and by requiring students to make practical application of the instruction received in the class-room, in the gardens and forcing house.

The importance of the introduction of instruction of this kind cannot be estimated, if the people of the State will avail themselves of the opportunities here offered for gaining a practical working knowledge of market gardening and fruit growing, when we consider the natural advantages which this State possesses for prosecuting this line of work. The demand for fresh vegetables in our local markets is increasing, and the facilities for transportation enjoyed by a large portion of the State are such that the large markets of New England are open to us on terms almost equal to those enjoyed by parties living in closer proximity to them. In the line of small fruits, there are certainly opportunities for profitable work for they come on at a season so much later than those grown farther south that there is little or no competition to overcome.

During the year a dairy house has been constructed and thoroughly equipped for giving instruction in the manufacture of butter and cheese by the most approved methods known at the present time.

The dairy building has, on the ground floor, a butter room 24x28 feet, a cheese room, 24x28 feet, an engine room 12x18 feet, an office 12x13 feet and a hall and stair case leading to the second floor. The upper story contains a lecture room 24x33 feet, a milk testing room, cheese curing room, and a store room.

The butter room is equipped with apparatus for raising cream by the deep setting process, also a Sharpless Russian Steam Cream Separator and a United States Butter Extractor, besides all other apparatus necessary for giving instruction to students in caring for and manipulating milk and cream for making a first-class article of butter.

The cheese room is equally well equipped for giving instruction in the art of cheese making.

This building was opened to students last September with Mr. James Cheesman, Secretary of the New England Dairymen's Association, as instructor in practical dairying. The students of the agricultural course have been required to work in the dairy from nine to twelve hours per week, under the direction of Mr. Cheesman since the dairy house has been in working condition; and have made good progress. Both here and in the horticultural work the college has succeeded in combining manual labor of an educational character, with class-room instruction for agricultural students in a way that will commend itself to the advocates of industrial education. Whenever this can be brought about, it is desirable to do so; for there can be no doubt that the sciences are more thoroughly learned when applied directly to the every day affairs of life than when studied from the stand point of pure science.

The introduction of instruction in dairying at the college ought to have a tendency to improve the dairy products of the State and to make the business more profitable. The business is one that should be encouraged not only on the

ground that it has been universally successful in this State wherever it has been properly managed, but because it retains on the farm so large a proportion of the manurial value of the crops produced and whenever purchased feeds are fed to dairy stock, as is the common practice, dairy farms are yearly increasing in crop producing power. The opportunities now offered at the State College for gaining a thorough scientific and practical education in dairying should not be neglected by those who intend to make this branch of farming a specialty.

Mr. G. M. Gowell who was elected instructor in practical agriculture and farm superintendent, at the June meeting of the Trustees, reported for work in August. During the fall term he has had charge of the instruction in stock matters. Instruction has been given in dairy stock and in judging dairy animals by score card. The success attained by the students in their study of animals has been all that could reasonably be desired. They were taken to the Eastern Maine Fair and were required to score four animals which they had never seen before. The footings of the score cards for the different animals made independently by each student did not differ from each other or from the score cards of their instructor more than is often seen in cards made up by different expert judges.

Three short courses in agriculture were organized last winter and advertised to commence last August; one of them requiring two years' attendance at the college and embodying the scientific and practical studies of the full four years' course, omitting all literary studies. This course was designed for young men who desire to fit themselves more thoroughly for agricultural work but who have not the time to take the full college course.

The one year's course was made up of selections from the two years' course and was designed for young men who have even less time at their disposal. A four months' course in dairying was also organized for those who might desire to make a specialty of this branch of agriculture.

All of these courses were extensively advertised but no students reported for any of them. This was a disappointment; for it was believed by friends of the institution that there were many young men who would avail themselves of the advantages offered by these short courses, and extra effort was made and expense incurred on the part of the college to meet the supposed demand for instruction of this kind.

The college farm has been, as in the past, used so far as practicable for purposes of instruction. Different systems of manuring have been illustrated. Especial attention has been given to the clover crop as a means of developing and preserving the fertility of the soil. Shorter rotation of crops than is in common practice among farmers will be undertaken and their value demonstrated.

A three years rotation of clover, potatoes, and grain is under way at the present time for the purpose of investigating the economy of practicing that system in Maine.

The cultivation of all farm crops adapted to our soil and climate, which are not illustrated in the college gardens, will be taken up by the farm so far as means will allow.

Farm improvements have been under way during the year. Eight acres of good land have been cleared of bushes and the work of clearing ten more is now in progress. A large amount of unsightly stone wall has been removed. Many large boulders have been removed from the fields and the surface stones have been cleared from two acres of land in the rear of the dairy building.

A commodious and substantial cart and tool house has been built and will prove a great convenience for housing farm carts, wagons, and machinery.

The horse stable has been moved from its position southwest of the barns to a position back of the farm house, thereby making it more convenient and greatly improving the general appearance of the farm buildings.

The herd of cattle on the college farm including those of the Experiment Station numbers thirty-five head, consisting of four pure bred Guernseys, ten pure bred Maine Jerseys,

three Ayrshires, two Holsteins and sixteen grades, all of which are in a healthy and thrifty condition.

The horses and colts number seven of which two are common mares, two are three-year-old colts, two are yearlings and one a foal of the present year. The last three are the get of the Percheron stallion Bayard of Houghton Farm and were bred on the farm.

The swine on the college farm number thirty-five of which four are breeding animals, the remaining thirty-one are shoats and fall pigs. These animals are pure bred Berkshires and Berkshire grades. Among the Experiment Station swine are representatives of four other breeds, Tamworth, Cheshire, White Chester and Jersey Reds.

These animals with a flock of twelve Shropshire sheep and lambs comprise the stock of the college farm. Four of the leading breeds of dairy cattle are represented, one of the leading breeds of draft horses, one of the leading breeds of mutton sheep and five breeds of swine.

The crops have been exceptionally good; the experimental and farm grains amounting to nearly 1,300 bushels, while the hay cut was 145 tons, a yield of two tons per acre. These two crops were the principal crops of the farm. The area of potatoes was small but the yield was about 200 bushels per acre. There was also a small area in peas which gave a yield of twenty bushels per acre.

Respectfully submitted,

WALTER BALENTINE.

## Department of Horticulture.

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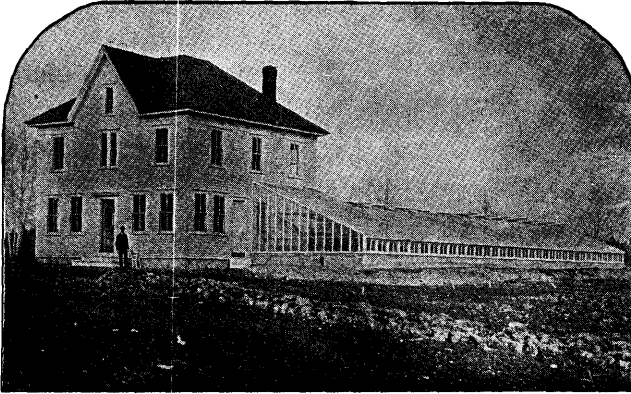
*President M. C. Fernald.*

SIR:—The following report of the work of the department of horticulture is respectfully submitted.

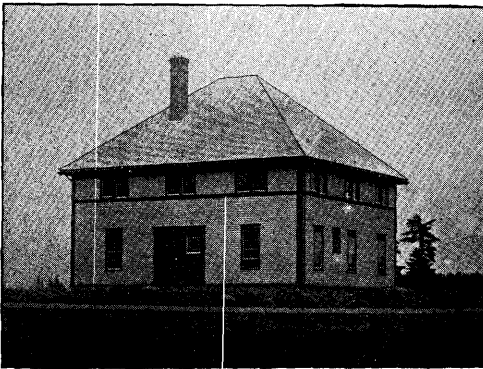
My connection with the college dating only from the opening of the spring term, in February, the work of the present season has necessarily been largely in the way of organization. However, in addition to my work in connection with the experiment station, I have had general supervision of the work on the campus and in the gardens, and have given instruction in horticulture and landscape gardening.

### INSTRUCTION.

During a portion of the spring term I gave to the seniors in the course in agriculture a series of lectures on landscape gardening. The work included discussions concerning the general principles which should control man in his efforts to beautify his surroundings. Special stress was laid on the practical application of these principles, and the general hints to be derived from their study. In short, the design of the course is to give young men definite ideas concerning the ornamentation of the home grounds, the school yard and the cemetery, as well as hints on the arrangement of public parks and pleasure grounds, and to encourage a taste for attractive surroundings. Class-room work will be of no avail, however, unless by daily association the student may become accustomed to better surroundings. In order that we may have the means of practically illustrating the value of taste-



HORTICULTURAL BUILDING.



DAIRY HOUSE.





ful surroundings, it will be necessary that extensive improvements be made in the condition of the campus.

During the term just closed, I have given instruction in vegetable gardening and fruit growing. As indicating in a general way, the ground covered, I might say: The course included lectures concerning methods of construction of greenhouses and other forcing structures, with directions for the general care and management of the same. Following a brief discussion concerning fertilizers for the garden, and general principles of planting and cultivating, the leading vegetables were taken up and specific directions were given as to best methods of culture, both in the field and under glass. Grapes and the various orchard fruits and small fruits were considered, and instruction was given as to methods of propagation, culture and general management. The enemies and diseases of vegetables and fruits also received attention. Two afternoons each week were spent in practical work under my direction.

The plan of work for next spring, is to devote the first part of the term to a study of the origin and distribution of cultivated plants; the phenomena of germination and vegetation; methods and effects of crossing and hybridizing; the variations of plants as affected by soil, climate, and cultivation; or, in general, the underlying principles on which the art of horticulture is based.

#### MEANS OF ILLUSTRATION.

The college gardens are planted largely with a view to furnishing material for study. It is a noticeable fact that many of our students are entirely unacquainted with the most common vegetables. For this reason the range of varieties has been wider than would otherwise be advisable.

The small fruit plantation, belonging to the experiment station, affords excellent opportunities for students to observe the characteristics and relative value of different varieties, and also provides material for illustrating different methods

of propagation and culture. An orchard of about three acres, containing apple, pear, and cherry trees has been planted during the year. The work of setting the trees was done, principally, by the students of the class in horticulture. While the primary object of the forcing-house is for purposes of experimentation, the students have an opportunity to learn the practical operations necessary in caring for such a house, and to do practical work in handling and caring for the plants.

#### IMPROVEMENTS.

It is believed that, with the larger cities of our State to supply, and with the excellent shipping facilities at command, the business of forcing fruits and vegetables for the winter markets is destined to become an important industry. For this reason the forcing-house erected last year has been partly remodeled and as at present arranged is well adapted for the purpose named,—how well, the present condition of the house will indicate. We are thus enabled to teach in a practical way what would be impossible in the class-room or through the press.

The small head-house erected with the forcing-house was entirely inadequate for the work of instruction or experimentation. It has been replaced by a two-story building thirty feet square, which is found much more convenient. This building contains, on the first floor, besides the furnace room and a general laboratory and work room, a small office, and a room for the smaller garden tools. On the second floor is an excellent photographic studio, which is a great convenience in experimental work, an herbarium room, and a sleeping room; the latter that some one may be in the building to attend to the furnace.

The grounds in front of the forcing-house have been graded and a drive has been constructed—thus doing away with the necessity of driving across the lawn as heretofore. The cost of this work was about seventy-five dollars.

The grounds around the experiment station building have been put in good order, and a drive has been constructed which will admit of heavy trucking to the rear of the building. The work has been done thoroughly and will be a permanent improvement. The expense of this work is borne by the experiment station.

The old stone wall, directly east of the experiment station building has been nearly cleared away. The money for this purpose was taken from the appropriation for farm improvements, and the work was done, mainly, by the farm teams.

The marshy depression north of Coburn Hall has been partially filled, and, when the work is completed, the appearance of that portion of the campus will be greatly improved. Aside from the removal of numerous dead and worthless trees, no other changes have been made in the condition of the campus.

During the year a plane table survey of the campus has been made by the department of civil engineering. As soon as a map can be prepared, a plan of the grounds will be drawn up, that there may be a definite basis for the work of improvement.

The extent to which general gardening should be carried is still a problem. The work in this line during the present season was limited on account of the condition of the soil intended for garden purposes. The land was completely over-run with "witch grass," and was left fallow, with the hope of destroying this pest. By thorough cultivation this end has been practically accomplished, and next year better soil will be at command. The demand for garden produce is so limited, however, that it may seem inadvisable, aside from experimental work, to do more than illustrate methods of culture and familiarize students with the leading kinds and varieties of vegetables.

#### NEEDS OF THE DEPARTMENT.

It is important in all of the work of this department that we have a good team at command. A team, as is also the

case with a man, which is accustomed to the particular kinds of work which we have to do, is much more valuable than one accustomed only to ordinary farm work. Owing to the necessarily heavy expenditures for tools and apparatus this year, it was thought best to hire a team for the summer rather than to purchase, and to depend on the farm to a large extent for tools. A team was secured, but was called for by the owners about the middle of September, just when most needed in carrying on the work on the grounds. I would ask, therefore, for a suitable team and the necessary harness and tools.

One of the great needs, in the work of improving the campus, is a complete system of under drains. While with the means at command, it would be impossible to attain this end, there are a few portions of the grounds which specially require attention. These are the areas south of Coburn Hall, in the vicinity of Wingate Hall, and of the forcing-house.

It is my design, so far as possible, to make a complete collection of cultivated plants for purposes of reference and study. There is a room in the new head-house intended for this work. We shall need tables and herbarium cases. A part of the necessary expense may be borne by the experiment station.

The furnace which heats the forcing-house is of sufficient size to heat the other building as well, and as some method of heating is necessary, I would suggest the advisability of piping the new building for hot water.

A schedule of the estimated cost of the items named, and of the running expenses of the department for the ensuing year is appended.

I have been assisted during the year by Mr. L. B. Plummer, who has acted as foreman and assistant in experimental work. He has been faithful and conscientious in the discharge of his duties.

An account of my work as horticulturist of the experiment station will be published in the annual report of the station.

While the year's work has not been wholly satisfactory to myself, a beginning has been made and the department is in better condition for future progress.

Respectfully submitted,

W. M. MUNSON,

*Professor of Horticulture.*

## TREASURER'S REPORT.

*To the Trustees of the Maine State College of Agriculture  
and the Mechanic Arts:*

*Maine State College in account with GEO. H. HAMLIN, Treasurer.*

### DISBURSMENTS.

Boarding House.....	\$6,130 09
Construction of engineering building.....	19,436 99
General expense.....	1,398 76
College salaries.....	20,970 03
Experiment Station salaries.....	10,220 26
Apparatus, furniture and fixtures.....	6,271 37
Incidentals.....	695 61
Insurance.....	1,221 68
Experiment Station, exclusive of salaries.....	5,684 44
Improvement of grounds, Horticultural department.....	147 20
Farm improvement.....	709 63
Improvement of grounds.....	339 16
General repairs.....	522 03
Stationery.....	5 30
General shop account.....	654 38
Trustees' expense.....	451 26
Water works construction.....	2,229 93
Heating apparatus of shop.....	310 60
Repairs on Oak Hall.....	35 82
Construction of dairy building.....	2,833 43
Fuel.....	2,690 08
Construction of foundry.....	708 09
"    green house.....	666 10
Grading about engineering building.....	33 00
Steam heating of laboratory.....	18 40
Construction of Head house, Horticultural department.....	514 71
Heating apparatus of Oak Hall.....	78 59
Library.....	827 91
Military department.....	198 54
Construction of mineralogical laboratory.....	18 04
Machinery for shop.....	1,212 72
Repairs on Q. T. V. club house.....	380 25
"    laboratory furnace.....	44 03
"    Coburn Hall.....	190 03
Reading room.....	73 84
Water supply.....	102 90
Interest and discount.....	101 94
Sundry small accounts.....	36 60
Heating apparatus of engineering building.....	1,847 63
Department of Horticulture, college.....	1,010 35
Construction of bath rooms.....	100 83
"    water tower.....	2,107 40
Clock for Wingate Hall.....	41 88
Diplomas.....	49 50
Wages of janitor.....	534 00
	93,855 24
Balance on hand December 1, 1891.....	16,861 02
	\$110,716 26

RECEIPTS.

Balance on hand December 1, 1890.....	\$2,969 86
State appropriation.....	12,500 00
United States government for Experiment Station, under Hatch bill.....	14,999 87
"          "          under Morrill bill.....	48,000 00
Interest on Coburn fund.....	4,000 00
"    land grant fund.....	5,915 00
"    Lombard fund.....	180 00
"    city of Bangor bonds.....	180 00
"    Security Loan and Trust Company bonds.....	180 00
Rent.....	160 00
W. H. Jordan, Director.....	476 03
M. C. Fernald, balance due agricultural department.....	84 14
Diplomas.....	83 00
Interest on temporary deposits.....	216 96
Sundry small receipts.....	43 71
F. E. Kidder, scholarship.....	675 00
Bangor Savings Bank.....	10,000 00
From students.....	9,861 76
Coal.....	108 09
Horticultural department.....	52 84
A. E. Spencer.....	30 00
	<hr/>
	\$110,716 26

CONDITION OF ENDOWMENT FUND.

Coburn bequest—State of Maine 4 per cent bonds.....	\$100,000 00
Invested in State of Maine 5 per cent bonds.....	118,300 00
"    city of Bangor 6    "    ".....	3,000 00
"    Lombard Investment Company 6 per cent bonds.....	3,000 00
"    Security Loan and Trust Company 6 per cent bonds.....	3,000 00
*    "    Hallowell C. and S. Academy 6 per cent bonds.....	4,000 00
"    F. E. Kidder, scholarship fund.....	675 00
	<hr/>
	\$231,975 00

\* Suspended payment of interest.

GEO. H. HAMLIN, *Treasurer.*

This is to certify that I have examined the above accounts and find them properly vouched and correctly cast.

HENRY LORD, *Auditor.*





SUMMARY OF  
METEOROLOGICAL OBSERVATIONS

TAKEN AT THE

MAINE STATE COLLEGE of AGRICULTURE and the MECHANIC ARTS,

Latitude,  $44^{\circ} 54' 2''$  N. Longitude,  $68^{\circ} 40' 11''$  W.

FROM JANUARY, 1869, TO JANUARY, 1892.

BY PRESIDENT FERNALD.

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Height of instruments above the level of the sea, 134 feet until June, 1879,  
and 129 feet since that date.



## Explanations, Deductions and Remarks.

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The hours of observation are the same as those formerly adopted by the Smithsonian Institution, viz: 7 A. M. and 2 P. M., and 9 P. M., local time.

The figures in the columns headed "Force or pressure of vapor," show the height at which a column of mercury is maintained by the weight of the moisture of the air.

The warmest day of the year 1891 was July 14th, when the mean temperature was 79°.2, and the coldest day was February 14th, when the mean temperature was 1°.4 above zero.

The highest temperature (92°.8) recorded during the year was on the 16th of June and the lowest temperature (17°. below zero) on the 15th of February.

The range of temperature between the two extremes is 109°.8, which is less by 3°.3 than the average range between the extremes for the last twenty-three years.

The warmest day within the period covered by the tables was August 7th, 1876, when the mean temperature was 85°.3, and the coldest day January 8th, 1878, when the mean temperature was 17°.2 below zero. The highest temperature (96°.7) occurred on August 6th, 1876, and the lowest temperature (36°.3. below zero) on December 31st, 1890.

A comparison, as regards temperature, of the several months of 1891, with the mean temperature of corresponding months for twenty-three years, is given below:

Months.	Mean Temperature from 1869 to 1891, inclusive.	Mean Temperature for 1891.	
January.....	15°.84	21°.15	5°.81 warmer.
February.....	19°.05	22°.13	3°.08 "
March.....	27°.27	28°.90	1°.63 "
April.....	40°.08	41°.27	1°.19 "
May.....	52°.50	51°.21	1°.29 colder.
June.....	62°.38	62°.68	0°.30 warmer.
July.....	67°.35	65°.24	2°.11 colder.
August.....	65°.51	66°.31	0°.80 warmer.
September.....	57°.52	60°.73	3°.21 "
October.....	45°.84	45°.63	0°.21 colder.
November.....	34°.00	36°.89	2°.89 warmer.
December.....	21°.58	31°.59	10°.01 "

The year 1891 (mean temperature 44°.48) averaged 2°.06 warmer than the mean temperature of the twenty-three years under notice.

The month of December, 1891, (mean temperature 31°.59) was the warmest December in twenty-three years, the nearest approach being in 1881, when the mean temperature of December was 30°.48.

A light summer frost occurred on the morning of June 5th. The earliest autumnal frost, injuring vegetation, occurred on October 9th.

The thunder storms of 1891 were on May 16th and 18th, June 16th, 23d and 26th, July 15th and 25th, August 1st, 7th, 12th and 18th, and September 14th and 18th.

The rainfall and melted snow of 1891 amounted to 47.48 inches, a quantity greater by 1.77 inches than the average for twenty-three years; the snowfall was 82.00 inches, a quantity less by 13.25 inches than the average for the same period.

The number of days in 1891 on which the sky was at least eight-tenths covered with clouds was 95, or 26 per cent of the whole number. The number of days on which at least 0.1 inches of rain or snow fell was 135, or 37 per cent of the whole number; the number of days, therefore, without any considerable quantity of rain or snow, was 230, or 67 per cent of the whole number.

During the months of July, August and September the prevailing wind was S. W. and S.; during January and October, N. E. and N.; during the other months of the year N. W. and W. Heavy winds prevailed on February 23d, 25th, and 27th, March 4th, 6th and 17th, May 22d, Aug. 21st, Oct. 23d, November 2d and 17th, and December 30th and 31st.

The prevailing wind for the twenty-three years from 1869 to 1891, inclusive, was from the north-west and west. The relative direction and force of the wind for this period are indicated approximately by the following numbers: N. W. and W., 4; S. W. and S., 3; S. E. and E., 1; N. E. and N., 2.

The principal auroras of 1891 were on the evenings of January 16th, February 13th, March 17th, 30th and 31st, April 10th, May 4th, 8th and 14th, June 4th, September 3d, 8th, 9th and 10th, October 5th and 10th, November 6th, 7th, and 19th and December 9th. The principal lunar halos were on February 15th and 23d, April 21st and May 22d, and the principal solar halos, on February 5th, 13th and 23d, May 21st and 22d, June 13th and 14th, October 22d, November 19th and December 6th.

The Zodiacal light was observed on the evenings of January 8th and 10th, February 2d, 10th and 27th and March 6th and 7th.

The largest number of meteors observed on any date was on the evening of January 8th.

The barometer indicated the greatest pressure in the month of November, and the least in the month of January. The range between the two extremes was 2.180 inches. The least mean pressure was during April and the greatest, during November when the average height of the mercury in the barometer at an elevation of 129 feet above the sea level was 30.016 inches.

The mean humidity of the air for the year was .78.

SUMMARY BY MONTHS—1891.

MONTHS.	TEMPERATURE IN THE OPEN AIR.									RAIN AND SNOW.		CL'DS. Mean percentage of cloudiness.	WINDS.				BAROMETER.			Relative humidity or fraction of saturation.				
	Mean of warmest day.		Mean of coldest day.		Highest temperature.		Lowest temperature.		Mean of maximum temperatures.	Mean of minimum temperatures.	Mean of three daily observations.		Amount of rain and melted snow— inches.	Amount of snow—inches.	Per cent of direction and force.				Barometer height reduced to freezing point of water.					
	Day.	Temperature.	Day.	Temperature.	Day.	Temperature.	Day.	Temperature.							N. W. and W.	S. W. and S.	S. E. and E.	N. E. and N.	Maximum.				Minimum.	Mean.
January .....	22	41.0	1	7.4	23	47.8	1	-17.0	29.54	11.22	21.15	7.66	32.5	.60	.23	.10	.12	.55	30.573	28.438	29.916	100	48	84
February.....	25	44.1	14	1.4	25	47.0	15	-17.0	32.83	10.50	22.13	2.93	14.0	.52	.44	.19	.23	.14	30.567	29.213	29.902	100	37	81
March.....	22	46.0	2	3.0	29	53.3	3	-5.4	38.03	19.39	28.90	5.20	12.0	.39	.50	.03	.19	.28	30.443	29.290	29.997	100	36	75
April.....	18	51.8	5	30.5	28	68.6	6	21.8	50.17	32.34	41.27	3.26	11.0	.52	.53	.13	.10	.24	30.463	29.000	29.763	100	35	75
May.....	30	63.9	5	40.0	31	76.4	6	29.7	61.98	40.28	51.21	2.83	-	-	.42	.27	.18	.13	30.365	29.537	29.874	100	35	73
June.....	15	76.7	5	52.8	16	92.8	5	34.4	72.25	51.92	62.68	3.20	-	.53	.34	.14	.20	.32	30.053	29.514	29.803	100	26	74
July.....	14	78.2	27	59.5	14	91.3	10	47.1	76.38	55.11	65.24	3.56	-	.40	.22	.36	.29	.13	30.321	29.491	29.869	100	50	79
August.....	25	74.8	19	57.6	11	87.4	20	43.3	75.77	56.65	66.31	4.67	-	.49	.22	.44	.16	.18	30.183	29.479	29.887	100	43	82
September.....	25	71.7	30	50.9	25	86.1	20	40.1	70.68	51.62	60.73	3.68	-	.41	.26	.43	.15	.16	30.320	29.542	29.994	100	43	83
October.....	4	68.6	28	32.0	4	82.8	29	22.3	54.48	36.90	45.63	2.85	-	.52	.36	.17	.06	.41	30.608	29.309	29.909	100	39	81
November.....	11	55.6	29	11.2	12	60.7	30	3.2	45.55	28.65	36.89	2.88	2.0	.46	.46	.31	.12	.11	30.618	29.242	20.016	100	38	75
December.....	23	48.8	17	6.6	5	52.2	18	2.0	39.76	22.07	31.59	4.76	10.5	.51	.41	.27	.20	.12	30.355	29.254	29.927	100	49	80
Year.....	14	78.2	14	1.4	16	92.8	15	-17.0	53.95	34.51	44.48	47.48	82.0	.49	.36	.24	.17	.23	30.615	28.438	29.905	100	26	78

METEOROLOGICAL.

## SUMMARY BY YEARS—From 1869 to 1891, inclusive.

YEAR	TEMPERATURE IN THE OPEN AIR.										RAIN AND SNOW.		O'ls.	WINDS.				BAROMETER.			Relative humidity or fraction of saturation.						
	Mean of hottest day.		Mean of coldest day.		Highest temperature.		Lowest temperature.		Mean of maximum temperatures.	Mean of minimum temperatures.	Mean of three daily observations.	Amount of rain or melted snow in gauge—inches.		Depth of snow—inches.	Per cent of direction.				Barometer height reduced to freezing point.					Force or pressure of vapor in inches.			
	Day.	Temperature.	Day.	Temperature.	Day.	Temperature.	Day.	Temperature.							N. W. and W.	S. W. and S.	S. E. and E.	N. E. and N.	Maximum.	Minimum.				Mean.	Maximum.	Minimum.	Mean.
1869,	July 11	74.2	Jan. 22	-3.8	July 11	87.2	Mar. 6	-22.0	50.01	33.37	41.77	44.72	84.92	.55	.41	.29	.14	.16	30.519	28.858	29.780	.826	.005	.250	100	25	76
1870,	July 24	82.8	Jan. 14	-9.7	July 24	94.0	Feb. 4	-17.0	53.02	35.45	44.26	40.98	78.75	.50	.35	.33	.10	.22	30.578	28.902	29.791	.878	.016	.279	100	13	74
1871,	May 30	76.0	Jan. 23	-14.9	May 30	88.6	Jan. 23	-20.6	50.44	33.33	41.92	41.63	80.50	.50	.42	.33	.10	.15	30.585	29.000	29.795	.956	.006	.244	100	17	75
1872,	July 16	79.5	Dec. 25	-11.8	June 30	90.6	Dec. 25	-23.0	50.02	33.22	41.60	48.54	113.00	.53	.37	.28	.13	.22	30.446	28.712	29.706	.793	.011	.258	100	23	77
1873,	July 30	75.5	Jan. 30	-4.9	July 26	92.0	Jan. 30	-26.5	49.93	31.28	40.93	40.78	124.00	.49	.38	.30	.10	.22	30.680	28.423	29.794	.778	.009	.232	100	20	74
1874,	July 15	76.3	Jan. 26	-15.5	July 15	86.3	Feb. 2	-26.0	50.18	32.21	41.35	44.94	132.00	.52	.37	.36	.08	.19	30.719	28.981	29.825	.794	.009	.240	100	19	76
1875,	Aug. 29	74.8	Nov. 30	-9.8	Aug. 29	87.8	Dec. 20	-23.0	48.49	30.11	39.58	41.94	93.80	.50	.40	.30	.09	.15	30.550	28.939	29.814	.844	.014	.239	100	24	76
1876,	Aug. 7	85.3	Feb. 24	-13.4	Aug. 6	96.7	Dec. 26	-21.5	50.74	32.32	42.03	52.37	123.00	.49	.43	.30	.08	.19	30.783	28.458	29.808	.935	.014	.250	100	21	76
1877,	Aug. 24	75.1	Jan. 25	-11.3	June 1	89.0	Jan. 26	-32.5	52.45	33.63	43.39	40.17	66.50	.52	.34	.30	.12	.24	30.494	28.888	29.837	.762	.009	.269	100	19	76
1878,	June 30	81.9	Jan. 8	-17.2	June 30	93.5	Jan. 8	-35.6	52.07	35.38	44.34	48.57	59.50	.56	.33	.33	.13	.21	30.554	28.794	29.796	.872	.009	.280	100	20	78
1879,	July 16	77.8	Dec. 21	-11.7	Aug. 2	88.0	Dec. 27	-26.0	50.10	31.67	41.62	46.73	112.00	.51	.38	.37	.07	.18	30.638	28.537	29.851	.843	.012	.258	100	15	75
1880,	July 10	82.3	Feb. 2	-4.4	July 10	94.8	Jan. 14	-15.4	52.05	33.50	43.85	33.81	69.00	.50	.39	.23	.18	.20	30.644	29.090	29.874	.790	.015	.269	100	23	75
1881,	Aug. 5	78.1	Feb. 2	-9.1	Aug. 5	91.0	Jan. 2	-18.2	52.11	34.98	43.87	42.80	54.50	.54	.45	.18	.14	.23	30.647	28.919	29.862	.891	.019	.281	100	21	77
1882,	Aug. 6	80.7	Jan. 24	-10.0	Aug. 5	92.0	Jan. 25	-22.4	50.76	33.10	42.54	41.26	110.00	.49	.46	.18	.12	.24	30.724	29.121	29.885	.819	.016	.261	100	24	75

1883,	July 6	75.1	Dec. 23	-13.1	July 7	85.6	Jan. 6	-25.0	50.04	31.79	40.72	40.60	53 00	.48	.41	.30	.13	.16	30.64	28.750	29 904	.860	.015	.259	100	18	78
1884,	Aug. 18	77.2	Dec 20	-10.4	Aug. 18	86.0	Jan. 28	-29.0	51.57	33.23	42.85	44.95	90.00	.56	.35	.33	.14	.18	30.716	28.768	29.875	-	-	-	100	16	81
1885,	July 25	76.4	Jan 22	-11.5	July 25	89.2	Jan. 31	-22.3	50.54	32.30	41.37	52.99	108.00	.49	.41	.32	.11	.16	30.608	28.800	29.849	-	-	-	100	24	79
1886,	July 7	78.0	Jan 12	-15.3	July 7	92.5	Jan. 12	-26.5	52.20	33.24	42.61	48.04	136.50	.53	.40	.35	.10	.15	30.731	28.556	29.889	-	-	-	100	10	78
1887,	July 2	82.5	Jan. 9	-13.8	July 2	93.3	Jan. 9	-29.0	51.05	32.90	42.07	52.88	115.25	.52	.44	.31	.09	.16	30.810	28.917	29.883	-	-	-	100	20	79
1888,	July 5	78.5	Jan. 15	-6.9	Jan. 23	93.4	Jan. 25	-19.6	49.79	32.02	41.26	58.04	134.60	.56	.51	.16	.13	.20	30.686	28.859	29.851	-	-	-	100	29	79
1889,	June 30	75.1	Feb. 23	-8.0	May 18	89.0	Feb. 24	-20.3	54.51	36.29	45.11	42.94	64.30	.54	.37	.33	.11	.19	30.833	28.781	29.870	-	-	-	100	26	78
1890,	Ag. 4	77.0	Jan. 10	-11.7	Aug. 4	86.4	Dec 31	-36.3	50.55	32.60	41.84	53.23	107.50	.53	.40	.25	.14	.21	30.741	29.064	29.877	-	-	-	100	35	80
1891,	July 14	78.2	Feb. 14	1.4	June 16	92.8	Feb 15	-17.0	53.95	34.51	44.48	47.48	82.00	.49	.36	.24	.17	.23	30.618	28.438	29.905	-	-	-	100	26	78
	1876.		1878.		1876.		1890.						Mean.														
23 yrs	Aug. 7	85.3	Jan. 8	-17.2	Aug. 6	96.7	Dec 31	-36.3	51.19	33.63	42.42	45.71	95.25	.52	.40	.28	.12	.20	30.833	28.423	29.845	-	-	-	100	10	77





# APPENDIX.



# CATALOGUE

OF THE

Maine State College of Agriculture and Mechanic Arts.

ORONO, MAINE, 1891-92.

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## TRUSTEES:

GEN. R. B. SHEPHERD, SKOWHEGAN, *President.*

HON. WM. T. HAINES, B. S. LL. B., WATERVILLE, *Secretary.*

ARTHUR L. MOORE, B. S., WATERVILLE.

HON. HENRY LORD, BANGOR.

RUTILLUS ALDEN, Esq., WINTHROP.

HON. CHARLES P. ALLEN, B. S., PRESQUE ISLE.

B. F. BRIGGS, Esq., AUBURN.

G. J. SHAW, Esq., HARTLAND.

## TREASURER:

PROF. G. H. HAMLIN, ORONO.

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## EXECUTIVE COMMITTEE:

GEN. R. B. SHEPHERD.

HON. WM. T. HAINES.

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## EXAMINING COMMITTEE:

HIS EXCELLENCY EDWIN C. BURLEIGH.

REV. CHARLES F. ALLEN, D. D.

HON. S. W. MATTHEWS.

# FACULTY.

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MERRITT C. FERNALD, A. M., PH. D., PRESIDENT,  
*Professor of Mental and Moral Science.*

GEORGE H. HAMLIN, C. E.,  
*Professor of Civil Engineering.*

ALFRED B. AUBERT, M. S.,  
*Professor of Chemistry.*

ALLEN E. ROGERS, A. M.,  
*Professor of History, Logic and Civics.*

WALTER BALENTINE, M. S.,  
*Professor of Agriculture.*

WALTER FLINT, M. E.,  
*Professor of Mechanical Engineering.*

FRANCIS L. HARVEY, M. S., PH. D.,  
*Professor of Natural History.*

JAMES N. HART, C. E.,  
*Professor of Mathematics and Astronomy.*

HOWARD S. WEBB, B. M. E.,  
*Instructor in Shop-Work, Secretary and Registrar.*

FRED P. BRIGGS, B. S.,  
*Assistant in Natural History.*

NATHAN C. GROVER, B. C. E.,  
*Assistant in Civil Engineering.*

HARRIET CONVERSE FERNALD, M. S.,  
*Librarian.*

WELTON M. MUNSON, B. S.,  
*Professor of Horticulture and Landscape Gardening.*

HORACE M. ESTABROOKE, M. S., A. M.,  
*Professor of Rhetoric and Modern Languages.*

JAMES S. STEVENS, M. S., PH. D.,  
*Professor of Physics.*

MARK L. HERSEY, A. M.,  
*Lieut. 9th U. S. Infantry, Professor of Military Science and Tactics.*

GILBERT M. GOWELL,  
*Instructor in Practical Agriculture.*

DAVID WILDER COLBY, B. S.,  
*Assistant in Chemistry.*

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AARON E. SPENCER,  
*Steward.*

# STUDENTS.

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## GRADUATES OF 1891.\*

Arey, Ralph Jesse,	Hampden.
Bailey, William Melvin,	Malden, Mass.
Clark, Edmund,	Bethel.
Clayton, Charles,	Bangor.
Farrington, Wallace Ryder,	Cape Elizabeth.
Farrington, William Rowe,	Portland.
Flanagan, John Henry,	Rockland.
Graves, Joseph Colburn,	Orono.
Hall, Bert Austin,	Shapleigh.
Hamlin, Cyrus,	Bangor.
Keyes, Prescott, Jr.,	Litchfield Corner.
Kilbourne, Charles Herbert,	North Waterford.
Lord, Robert William,	Skowhegan.
Menges, Hugo Gustave,	Bangor.
Moulton, Fred Charles,	Hiram.
Patten, William Nickels,	Cherryfield.
Starrett, Henry Vaill,	Warren.
Steward, John White,	Skowhegan.
Taylor, Charles Norton,	Hampden.
Thompson, George Edward,	Orono.
Valentine, William Alton,	Bethel.

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\*The annual report being made in December, includes parts of two academic years, hence the catalogue bears the names of students who have been connected with the College during any portion of the year 1891.

## SENIOR CLASS.

Alexander, John Francis,	Richmond,
Atherton, George Frederic,	Bethel.
Atkinson, William Hacker,	Brunswick.
Bristol, Mortimer Lucius,	Canton Ctr , Conn.
Butterfield, William Rowe,	Milford.
Clark, Roscoe Conkling,	Bethel.
Danforth, Ernest Wilbur,	Brunswick.
Doolittle, Herbert Edward,	Northfield, Mass.
Farrington, Mellen Edward,	Brewer.
Fernald, Robert Heywood,	Orono.
Gibbs, John Clinton,	So. Turner.
Grover, Arthur Curtis,	West Bethel.
Healey, Warren Evans,	Rockland.
Holden, William Cross,	So. Windham.
Maguire, George,	Biddeford.
Merrill, True Lander,	Orono.
Prentiss, Harry Mellen,	Brewer.
Prince, Job.	So. Turner.
Randlette, Charles Maurice,	Richmond.
Rich, George Frank,	Bethel.
Timberlake, Stanley Milton,	No. Turner.
Tyler, Joseph Albert,	Farmington.

## JUNIOR CLASS.

Alexander, James Almore,	Richmond.
Atkinson, Timothy Ralph,	North Anson.
Buck, Hosea Ballou,	Stillwater.
Crosby, Walter Wilson,	Bangor.
Gannett, Charles Henry,	Augusta.
Gould, Harris Perley,	North Bridgton.
Hamlin, Edwin Thompson,	Bangor.
Hammatt, William Cushing,	Bangor.
Hutchinson, George Weymouth,	Orono.
Jordan, Alva Thomas,	South Lewiston.
Jerrard, John,	Bangor.
Kittredge, Charles Prentiss,	Milo.
Lewis, Hugh McLellan,	South Berwick.
Murphy, Charles Clark,	Hampden.
Rowe, George Freeman,	Bangor.
Shaw, Orrin John,	Hampden.
Smith, Harry Maubic,	Bangor.
Smith, Lizzie Louise,	Veazie.
Tolman, Frank Stevens,	Milo.
Webster, John Milton,	Augusta.
Whitney, George Ansel,	Madison.
Williams, Hiram,	Portland.
Wilson, Pearly Rupert,	Solon.
Young, Thomas Jefferson,	Athens.



## SOPHOMORE CLASS.

Alford, Abbott Edwin,	Old Town.
*Blagden, Judson Billings,	Bluehill.
Bowler, Frank Colburn,	Berlin, N. H.
*Bradford, Charles Frank,	Union.
Cobb, Charles Edward,	Patten.
Cowan, Edward Henry,	Orono.
Durham, Leroy Tolford,	Monroe.
Fernald, Merritt Lyndon,	Orono.
French, Charles Frederick,	Glenburn.
Gilbert, Charles Edward,	Orono.
Gould, Frank Gilman,	Orono.
Gray, Jesse Alexander,	Old Town.
Hall, George Harry,	Bangor.
Harvey, James Elmore,	Readfield.
Hayes, Augustus Daniel,	Belfast.
Horn, Ralph Edwin,	Stillwater.
Jack, Walter Dows,	Topsham,
Jose, Wallace Hight,	Newport.
Kimball, James Mayberry,	Bangor.
Murray, Herbert,	Rockland.
Norwood, Leon Orlando,	Union.
Ricker, John Hale,	Cherryfield.
Rumball, George Washington,	Harrington.
Small, James Rideout,	Camden.
Wood, Edward Butler,	Camden.

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\* Deceased.

## FRESHMAN CLASS.

Achorn, Davis Tillson,	Rockland.
Atwood, Ernest Johnston,	Boston, Mass.
Boardman, Harold Sherburne,	Bangor.
Buck, Alfred Howard,	Foxcroft.
Calderwood, Isaac Glidden,	Vinalhaven.
Cowan, George Parker,	Bangor.
Dolley, Harry Adelbert,	Waterville.
Ellis, Merton Eugene,	W. Guilford.
Folsom, LeRoy Rowell,	Corinna.
French, Frank Luther,	Solon.
Frost, Charles Albert,	Monmouth.
Haseth, Gerardus Andries de,	Curacao, W. I.
Hincks, Charles Trask,	Bangor.
Knight, Ora Willis,	Bangor.
Jordan, Mabel Robins,	Stillwater.
Libby, Frank Joshua,	Richmond.
Martin, James William,	Waltham, Mass.
Merrill, Earl Clinton,	East Eddington.
Moulton, Albion,	Hiram.
Murphy, Walter Marshall,	So. Norridgewock.
Rollins, Melville Frederick,	Bangor.
Thomas, Charles Dura,	Brownville.
Urann, Mark Libby,	Sullivan.

## SPECIAL STUDENTS.

Atwood, Gustavus Gilbert,	So. Carver, Mass.
Bragg, Alvah H.,	Oakland.
Cooper, Walter,	West Searsmont.
Freeman, George Washington,	Portland.
Keith, William Everett,	Old Town.
Plummer, Leo Benjamin,	Orono.
Smith, Abbott Currier,	Bangor.
Steward, George Henry Colburn,	Marlboro', Mass.

## SUMMARY.

Graduates of 1891,	21	Sophomores,	25
Seniors,	22	Freshmen,	23
Juniors,	24	Special students,	8
		Total,	<u>123</u>

## PRIZES OF 1890.

Prentiss Prize, for best Junior Essay, awarded to Harry Mellen  
Prentiss of Brewer.

Prentiss Prize, Sophomore Declamation, awarded to Lizzie Louise  
Smith of Veazie.

Libbey Prize for best Agricultural Essay, awarded to Henry Vail  
Starrett of Warren.

The Franklin Danforth Memorial Prize for highest standing Senior  
year, course in Agriculture, awarded to Henry Vail Starrett of  
Warren.

Award for highest standing, Sophomore Class, to Charles Henry  
Gannett of Augusta.

Award for highest standing, Freshman Class, to Edward Butler  
Wood of Camden

## MILITARY DEPARTMENT.

### OFFICERS AND NON COMMISSIONED OFFICERS OF THE COBURN CORPS OF CADETS.

#### FIELD AND STAFF.

Second Lieutenant Mark L. Hersey, 9th U. S. Infantry,  
Commanding.

Major and Commandant, Robert H. Fernald.

First Lieutenant and Adjutant, William C. Holden.

First Lieutenant and Quartermaster, Frank S. Tolman.

Sergeant Major, Charles H. Gannett.

#### Co. "A."

#### Co. "B."

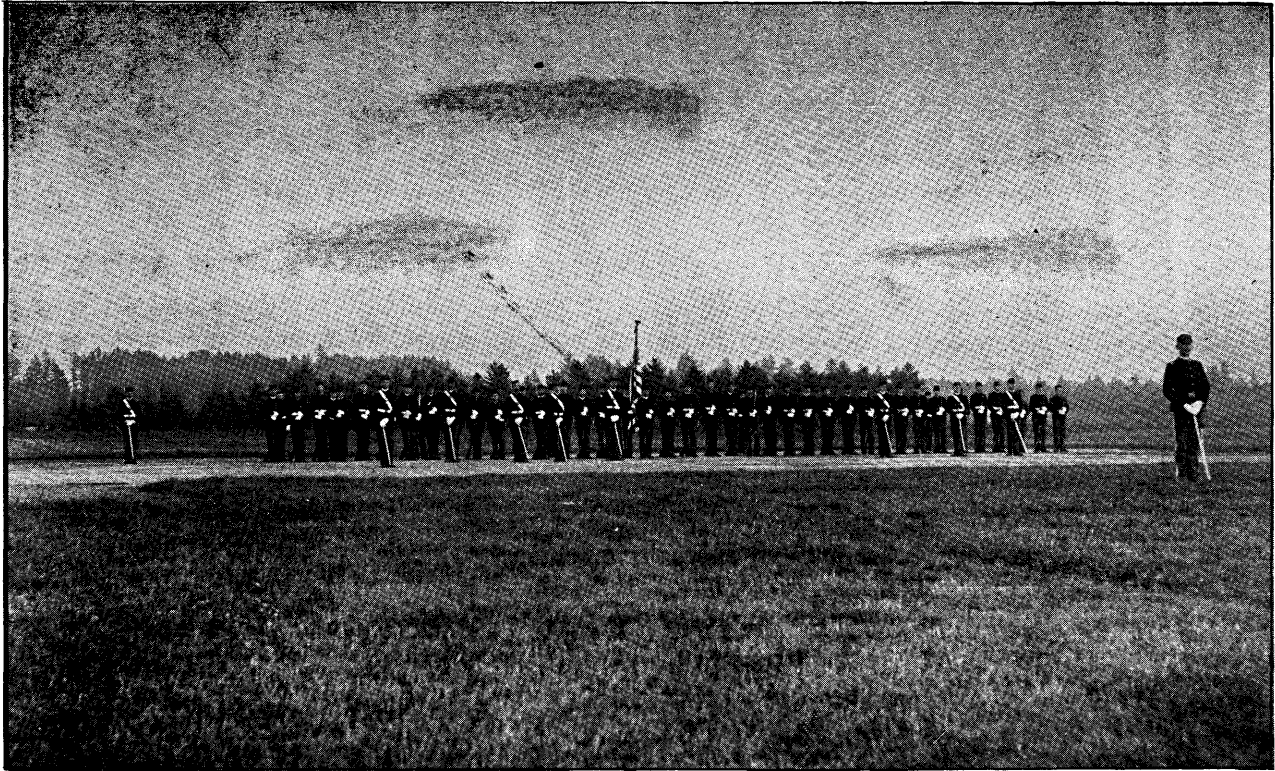
<i>Captain</i> ...	William E. Keith.	Mortimer L. Bristol.
<i>1st Lieutenant</i>	Warren E. Healey.	Charles M. Randlette.
<i>2nd</i> " "	George F. Atherton.	Arthur C. Grover.
<i>2nd</i> " "	William R. Butterfield.	George P. Maguire.
<i>1st Sergeant</i> ...	Walter W. Crosby.	Walter D. Jack.
<i>Sergeant</i> ...	John Jerrard.	Harry M. Smith.
"	Hosea B. Buck.	John M. Webster.
"	Hiram Williams.	Orrin J. Shaw.
"	Charles P. Kittredge.	Alva T. Jordan.
<i>Corporal</i> ...	Wallace H. Jose.	Herbert Murray.
"	Edward B. Wood.	Frank C. Bowler.
"	Frank G. Gould.	Augustus D. Hayes.
"	John H. Ricker.	James R. Small.

*Color Sergeant*, Harry M. Smith.

" *Corporal*, Wallace H. Jose.

" " Herbert Murray.

" " Frank C. Bowler.

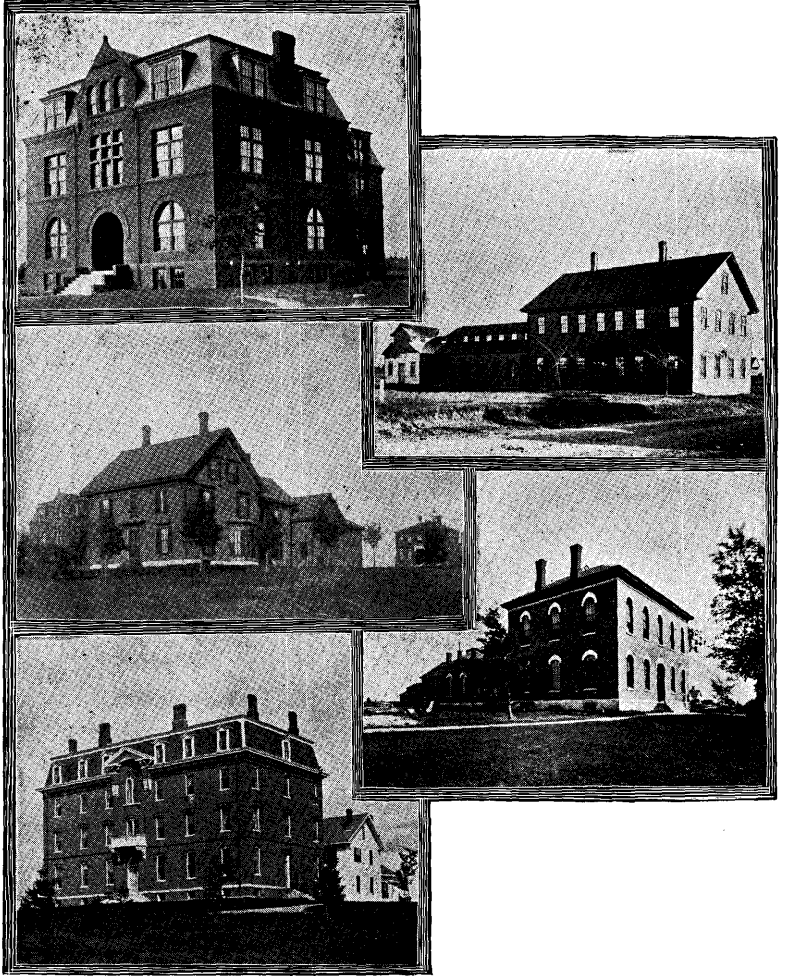


COBURN CADETS









GROUP OF BUILDINGS.

## DESIGN OF THE INSTITUTION.

It is the design of the Maine State College of Agriculture and the Mechanic Arts to give, at a moderate cost, the advantages of a thorough, liberal and practical education. It seeks to do this by means of approved methods of instruction, and especially by making prominent the system of practically applying in the drawing-room, in the laboratory, in the shop, and in the field, the lessons of the class-room. It thus endeavors to make its courses of high practical value.

By the act of Congress granting public lands for the endowment and maintenance of such colleges, it is provided that the leading object of such an institution 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."

While the courses of study fully meet this requisition, and are especially adapted to prepare the student for agricultural and mechanical pursuits, it is designed that they shall be also sufficiently comprehensive, and of such a character, as to secure the discipline of mind and practical experience necessary for entering upon other callings or professions.

## CONDITIONS OF ADMISSION.

Candidates for admission to the Freshman Class must be not less than sixteen years of age, and must pass a satisfactory examination in Arithmetic, Geography, English Grammar (especial attention should be given to Orthography, Punctuation and Capitals,) History of the United States, Physical Geography, Book-Keeping, Algebra to Logarithms, and Plane Geometry.

Candidates will also be tested on their knowledge of certain standard works in English Literature.

The required reading will include the following books or subjects:

For 1892—Shakespeare's *Julius Cæsar*; Scott's *Lady of the Lake*; Scott's *Ivanhoe*; Longfellow's *Evangeline*; Macaulay's *Essay on Warren Hastings*.

For 1893—Shakespeare's *Julius Cæsar* and *Twelfth Night*; Scott's *Marmion*; Longfellow's *Courtship of Miles Standish*; The *Sir Roger de Coverly Papers* in the *Spectator*; Macaulay's second *Essay on the Earl of Chatham*; Emerson's *American*

Scholar; Irving's Sketch Book; Scott's *Ivanhoe*: Dickens's *David Copperfield*.

For 1894—Shakespeare's *Julius Cæsar* and *Merchant of Venice*; Scott's *Lady of the Lake*; Arnold's *Sohrab and Rustum*; The Sir Roger de Coverley Papers in the *Spectator*; Macaulay's second Essay on the Earl of Chatham; Emerson's *American Scholar*; Irving's Sketch Book; Scott's *The Abbot*; Dickens's *David Copperfield*.

For 1895—Shakespeare's *Merchant of Venice* and *Twelfth Night*; Milton's *L'Allegro, Il Penseroso, Comus, Lycidas*; Longfellow's *Evangeline*; The Sir Roger De Coverley Papers in the *Spectator*; Macaulay's *Essay on Milton, Essay on Addison*; Webster's first *Bunker Hill Oration*; Irving's Sketch Book; Scott's *The Abbot*.

Although the knowledge of Latin is not required as a condition of admission, yet the study of this language is earnestly recommended to all who intend to enter this Institution.

Candidates for advance standing must sustain a satisfactory examination in the preparatory branches, and in all the studies previously pursued by the class they propose to enter.

Satisfactory testimonials of good moral character and industrious habits are required. They should be presented on or before the day of examination.

The Friday following the last Wednesday of June, and the Tuesday nearest the first day of September, are the appointed times for the examination of candidates at the college.

Arrangements have been made by which applicants accommodated by the plan may pass examination for admission without incurring the expense of coming to Orono. The gentlemen named below have been appointed examiners in the sections of the State in which they severally reside.

C. P. Allen, B. S.,	Presque Isle.
E. S. Danforth, B. S. }	Skowhegan.
S. W. Gould, B. S. }	
Henry K. White, A. M.,	Newcastle.
Ashley St. Clair,	Milltown.
Hon. N. A. Luce,	Augusta.
E. F. Heath,	Monmouth.
W. E. Sargent, A. M.,	Hebron.
Edwin P. Sampson, A. B.,	Saco.
A. D. Hall, A. B.,	Bethel.
J. A. Roberts, A. M.,	Norway.

Examiners will indicate to parties applying, the time and special place of examination. Arrangements have also been made with the Seminary at Bucksport and with the Academy at Hampden, by which students from these institutions may be admitted to the college on certificate of qualification from the respective Principals.

All candidates, wherever they may arrange to be examined, should make early application to the president of the college. Applications will be recorded and regarded in the order of their reception.

#### COURSES OF INSTRUCTION.

Five full courses are provided, viz: A course in Agriculture, in Civil Engineering, in Mechanical Engineering, in Chemistry, and in Science and Literature.

The studies of the several courses are essentially common for the first year, and are valuable not only in themselves, but also as furnishing a necessary basis for the more technical studies and the practical instruction of the succeeding years.

Physical Geography, required on admission, serves as a suitable introduction to Geology, which is taken up in each of the courses. Physiology serves as an introduction to Comparative Anatomy; and Algebra, Geometry, and Trigonometry, taught in the first year, are needed preliminaries to the higher mathematics and the practical applications required in Surveying, Engineering proper and Astronomy. Botany, Chemistry, and Physics are highly important branches, common to all the assigned courses, and hence taken by all the students who are candidates for degrees.

Rhetoric, French, and English Literature form the early part of the line of studies which later includes German, Logic, History of Civilization, United States Constitution, Political Economy, and Mental and Moral Science, branches, several of which relate not more to literary culture than to social and civil relations, and to the proper preparation for the rights and duties of citizenship.

Composition and Declamation are regular exercises in all the courses throughout the four years. Military exercises by all able-bodied male students are also maintained throughout the entire course. For the characteristic features of each course, reference is made to the explanatory statements following the several schemes of study.

## SPECIAL COURSES.

Students may be received for less time than that required for a full course, and they may select from the studies of any class such branches as they are qualified to pursue successfully. Students in Special Courses are not entitled to degrees, but may receive certificates of proficiency. Two short courses in Agriculture, definite in form, are also provided; courses involving less time than that required for obtaining a degree.

## DEGREES.

The full course in Civil Engineering entitles to the Degree of Bachelor of Civil Engineering; the full course in Mechanical Engineering, to the Degree of Bachelor of Mechanical Engineering; the full course in Agriculture, Chemistry, or Science and Literature, to the Degree of Bachelor of Science.

Three years after graduation, on presentation of a satisfactory thesis with the necessary drawings, and proof of professional work or study, the Bachelors of Civil Engineering may receive the Degree of Civil Engineer; the Bachelors of Mechanical Engineering, the Degree of Mechanical Engineer; the Bachelors of Science, the Degree of Master of Science.

## COURSE IN AGRICULTURE.

## FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Physiology.	Botany.
Rhetoric. (4)	French.
Reading and Analysis of Authors. (1)	Algebra. (6 w.)
Solid Geometry. (12 w.)	Trigonometry. (14 w.)
Algebra. (4 w.)	P. M.
P. M.	Mechanical Drawing. (F. of T.)
Free-Hand Drawing. (2)	Botanical Laboratory Work. (L. of T.) (2)
Dissecting. (1)	History. (L. of T.) (1)
General History. (1)	Analysis of Authors. (L. of T.) (1)

## SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Botany. (Cryptogamic.)	Qualitative Chemistry.
General Chemistry.	Physics.
French. (2)	French. (3)
German. (3)	German. (2)
Physics.	P. M.
P. M. Laboratory.	Laboratory Physics. (2)
Laboratory Physics. (2)	Analytical Chemistry. (3)
Laboratory Botany. (2)	
Experimental Chemistry. (1)	

## THIRD YEAR.

<i>First Term.</i>	<i>Second Term.</i>
German. (2)	German. (2)
Horticulture. (3)	Horticulture. (F. of T.) (3)
Agricultural Chemistry.	Landscape Gardening. (L. of T.) (3)
Invertebrate Zoology.	Logic.
English and American Literature.	Entomology. (F. of T.)
P. M.	Descriptive Astronomy. (L. of T.)
Horticulture. (2)	Agricultural Engineering.
Analytical Chemistry. (3)	P. M. Zoology and Entomology. (2)
	Horticulture. (1)
	Analytical Chemistry. (2)

## FOURTH YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Stock Feeding and Dairying.	Stock Breeding and Veterinary Science.
Comparative Anatomy.	Mineralogy and Geology.
Psychology.	U. S. Constitution and Business Law.
Political Economy and International Law.	Psychology.
P. M.	P. M. Thesis and Laboratory Work.
Comparative Anatomy. (2)	
Horticulture and Farm Experiments. (2)	
Literary Work. (1)	

### EXPLANATORY STATEMENTS.

In the framing of this course the design has been to fit young men to follow agriculture as a profession with success, never losing sight of the fact that education, in the truest sense, is the end to be attained.

The curriculum of studies is largely scientific and technical, not omitting, however, those branches that pertain to social and civil relations, and that serve to lay a broad foundation for a liberal and generous culture.

The instruction in agriculture is given mainly by lectures, and embraces subjects of great practical importance to the farmer which are briefly explained under the following heads :

#### AGRICULTURAL ENGINEERING.

Agricultural engineering includes land surveying, the construction of roads, drainage of land, irrigation, water supply for stock and household, farm implements and machinery, methods of cultivation, and the handling of different farm crops.

#### AGRICULTURAL CHEMISTRY.

Under agricultural chemistry the following topics are taken up : origin, formation, and composition of soils ; classification of soils and their physical characteristics ; chemical composition of plants ; sources of plant food ; farm manures, their composition, preservation, and application ; commercial fertilizers, their origin, composition, preparation, and use ; fermentation and decay ; the relations of the soils to heat and moisture ; the mechanical conditions best adapted to plant growth and the objects to be gained by cultivation.

#### STOCK FEEDING.

The subject of stock feeding treats of animal nutrition ; foods and fodder, their composition, digestibility, and comparative values ; the calculation of rations for the various classes of farm animals and for various purposes, as for growth, fattening, milk production, and work.

#### DAIRYING.

Dairying includes the study of milk secretion, the chemical and physical properties of milk, rennet action, milk analysis, and milk testing, and practical lessons in butter and cheese making.

## BOTANY.

Botany is taught by text-books, explanatory lectures, and practical laboratory work. The subject embraces General and Cryptogamic Botany.

*General Botany* considers the structure and uses of the organs of plants; the relation of the plant to the soil and atmosphere; the description, classification and naming of plants; preparation of plants for the herbarium; the relationship of the more important agricultural plants; and a special study of forage plants. Besides the regular recitations, the students have thirty hours of laboratory practice, describing, drawing and classifying plants, and each prepares a collection of fifty species.

*Cryptogamic Botany* embraces a detailed study of about thirty type forms of the prominent groups of non-flowering plants. Their life history is traced in detail by the aid of compound microscopes, and accurate drawings of them made. Special attention, so far as possible, is given to useful and injurious forms. Such injurious species as blue mold, black molds, fish molds, mildews, wheat smut, corn smut, ergot, potato rot, black knot, &c., are especially studied, and known remedies considered. Fungicides and spraying apparatus receive attention. Students are required to collect specimens and prepare them for the herbarium.

*Horticulture*.—During the first term of the junior year instruction is given in vegetable gardening and fruit-growing. Lectures are given concerning the construction, care, and management of green-houses, hot-beds, and other forcing structures; fertilizers for the garden; the general principles of planting and cultivating; the culture of the leading vegetables in the field and under glass; methods of propagation—grafting, budding, etc.; the culture of orchard fruits and small fruits; the enemies and diseases of vegetables and fruits, with preventives and remedies. The lectures are supplemented by practical work in the forcing-house, and in the college gardens and fruit plantations.

In the second term, special attention is directed to the underlying principles of horticulture. Lectures are given concerning the laws of plant growth; the variations of plants as affected by soil, climate, and cultivation; methods and effects of crossing and hybridizing; and the principles of selection. Students are required to spend one afternoon each week in the laboratory or in the green-house.



*Landscape Gardening.*—The object of instruction in this branch is to convey definite ideas concerning the ornamentation of the home grounds, the school yard, and the cemetery; as well as, hints on the arrangement of public parks and pleasure grounds; and to encourage a taste for attractive surroundings. The course includes a discussion of the general principles of landscape gardening as an art, and special stress is laid on the practical applications of these principles. Lectures are given on the relative positions of buildings, the arrangement and construction of walks and drives, the formation and care of lawns, the selection and planting of ornamental trees and shrubs with directions for pruning and general care, the improvement of school yards and rural cemeteries.

*Zoology.*—The branches studied that pertain to animal life are: Human Physiology, General Invertebrate Zoology, Comparative Vertebrate Zoology, Entomology, Stock Breeding, and Veterinary Science.

*Human Physiology* occupies one full term. Martin's *Human Body* is used as a text-book. Explanatory lectures, the examination of a skeleton, a manikin, models of the larynx, ear, eye, and brain, and dissections of lower animals, contribute to a practical knowledge of the anatomy and functions of the human body. Special attention is given to Hygiene and Pathology. Two hours a week are devoted to laboratory work. This includes an examination of models and dissecting.

*General Invertebrate Zoology* embraces a detailed study of type forms of all the branches of invertebrates. "Packard's *Zoology*" is used as a guide. Martin and Huxley's, Brooks', Colton's, and Osborne's laboratory manuals are followed in laboratory practice so far as they apply. Students daily use the compound microscope to examine minute forms and tissues. Fresh, dried, and alcoholic material, charts, models, and a good working library of reference books, contribute to a practical knowledge. Students make dissections, careful drawings, and classify the forms studied. Besides a full term in recitations students do forty hours laboratory work.

*Comparative Vertebrate Zoology* embraces a comparative study of type forms of vertebrate animals. The methods and facilities for work are the same as in *Invertebrate Zoology*. The college is provided with a set of Auzoux's *Models* and a good working collection of type forms. One hundred and forty-four hours in recitation and laboratory work are devoted to the subject. Special attention is given to the zoology of the domestic animals.

*Entomology* embraces a study of the anatomy, physiology, classification, and economic importance of insects. Packard's *Entomology for beginners* is used as a guide. This work is preceded by a careful study of the Arthropoda. Special attention is given to injurious and beneficial insects. Insecticides and approved methods of destroying insects are considered. About 100 hours in recitations and laboratory work are devoted to this subject.

#### STOCK-BREEDING AND VETERINARY SCIENCE.

Stock-breeding is taken up under such divisions as heredity, atavism, fecundity, in-and-in breeding, cross-breeding; and, connected with the teaching of this subject, studies are made of the various breeds of animals represented on the college farm and instruction given in the scaling of animals. The course of veterinary instruction includes the presentation of the principles of the science with the practical information necessary to enable the student to recognize and treat the more common diseases of our domestic animals, and to meet intelligently emergencies which frequently arise among live-stock requiring the aid of the veterinarian.

*Mineralogy* embraces a careful study of the physical and chemical properties and plowpipe tests of about thirty species of the more common minerals that are useful in the arts and sciences. Special attention is given to building materials and to the minerals that enter into the composition of soils or are applied to soils as fertilizers. Attention is given to the principles of classification and naming of minerals and the arrangement of cabinets.

*Geology* embraces a study of the forces that are and have been at work modifying the features of the earth; a consideration of the records these forces have left in the crust of the earth, and a history of the earth, or a succession of the events that have occurred through the agency of chemical, physical, and vital forces. The subject is illustrated by many mineral, rock, and fossil specimens, and by charts, maps, and diagrams.

Special attention is given to the origin and formation of soils, to the method of conducting geological surveys, and to the geology of Maine. Excursions are made so far as practicable for the purpose of study in Geology and Natural History.

Throughout the course, the endeavor is made to inculcate established principles in agricultural science, and to illustrate and enforce them to the full extent admitted by the appliances of the laboratory

and the farm. So far as possible, students are associated with whatever experimental work is carried on, that they may be better fitted to continue such work in after life.

Those who complete this course receive instruction also in Mathematics, French, German, English Literature, Logic, United States Constitution, Political Economy, and Mental and Moral Philosophy, Business Law and International Law, and on presenting satisfactory theses upon some agricultural topic, are entitled to the degree of Bachelor of Science.

#### SHORT COURSES IN AGRICULTURE.

In addition to the full course in agriculture requiring four years for its completion, short courses in agriculture are arranged to meet the wants of young men who desire to extend their knowledge in their chosen vocation, but who can devote only a limited amount of time to preparation or study.

In order to adapt them to varying conditions of earlier acquirement and of time that can be given to special study, two courses are offered, one extending over a period of two college years and the other over a single year of thirty-six weeks. Both are designed to be intensely practical. While the former affords the wider range of study and practice, the latter, in its narrower range, offers also a plan of systematic study of prominent and important agricultural subjects.

### Outline of Course of Two Years in Agriculture.

#### FIRST YEAR.

##### FIRST TERM.

Structural and Physiological Botany.  
General Chemistry.  
Farm Accounts and Rural and Business Law.  
Plane Geometry, or Agricultural Physics.

##### SECOND TERM.

Plant Analysis and Horticulture.  
Agricultural Chemistry.  
Drainage and Road Construction.  
Plane Trigonometry and Surveying, or Entomology.

SECOND YEAR.

FIRST TERM.

Horticulture.  
 Agricultural Chemistry.  
 Animal Anatomy and Physiology.  
 Political Economy.

SECOND TERM.

Stock Feeding and Dairying.  
 Stock Breeding and Veterinary  
 Science.  
 Civil Government.  
 Geology and Meteorology.

Outline of Course of One Year in Agriculture.

FIRST TERM.

Botany and Horticulture.  
 General and Agricultural Chemis-  
 try.  
 Animal Anatomy and Physiology.  
 Farm Accounts and Rural and  
 Business Law.

SECOND TERM

Plant Analysis and Horticulture.  
 Agricultural Chemistry.  
 Stock Feeding and Dairying.  
 Stock Breeding and Veterinary  
 Science.

REQUIREMENTS, CERTIFICATES.

Students in these short courses should be at least sixteen years of age and have a good common school education. While no formal entrance examination is required, the Professor in charge will satisfy himself of the fitness of candidates to pursue the course selected with success. Young men considerably older than the minimum age named and who have a practical knowledge of farming, will find one of these short courses especially valuable.

Certificates will be given those completing either of the courses successfully and passing a satisfactory examination. Certificates will also be given on completion of the practical course in dairying, for which arrangements have also been made.

## COURSE IN CIVIL ENGINEERING.

## FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Solid Geometry. (12 w.)	Algebra. (6 w.)
Algebra. (4 w.)	Trigonometry. (14 w.)
Rhetoric. (4)	Botany.
Reading and Analysis of Authors. 1	French.
Physiology.	P. M. Mechanical Drawing. (F. of T.)
P. M. Free-Hand Drawing. (2)	Laboratory Botany. (L. of T.) (2)
Dissecting. (1)	History. (L. of T.) (1)
General History. (1)	Analysis of Authors. (L. of T.) (1)

## SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Descriptive Geometry.	Analytical Geometry.
General Chemistry.	Descriptive Geometry. (F. of T.)
French. (2)	Surveying. (L. of T.)
German. (3)	Physics.
Physics.	French. (3)
P. M. Laboratory Physics. (2)	German. (2)
Mechanical Drawing. (3)	P. M. Laboratory Physics. (2)
	Analytical Chemistry. (F. of T.)
	(3)
	Field Work in Surveying. (L. of T.) (3)

## THIRD YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Calculus. (3)	Calculus. (F. of T.)
German. (2)	Descriptive Astronomy. (L. of T.)
Field Book and R. R. Surveying.	Mechanics of Engineering. (F. of T.)
P. M. Field Work and Drawing or	Graphic Statics. (L. of T.)
{ Field Work and Drawing. (3)	German. (2)
{ Laboratory Physics. (2)	Logic.
	P. M. Isometric and Cabinet Projection or
	{ Laboratory Physics. (2)
	{ Isometric and Cabinet Projection.
	(3)

## FOURTH YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Civil Engineering.	Civil Engineering.
Stereotomy. (F. of T.)	Designing.
Sanitary Engineering. (L. of T.)	U. S. Constitution and Business Law.
Practical Astronomy.	Geology and Mineralogy.
Political Economy and International Law.	P. M. Designing and Thesis Work.
P. M. Higher Surveying.	

## EXPLANATORY STATEMENTS.

The object of this course is to give the student a thorough knowledge of higher mathematics, mechanics, astronomy, and drawing, and, at the same time, a thorough drill in the use and care of the ordinary engineering instruments and in the application of mathematical principles and rules, so that the graduate can at once apply himself to engineering work, and be fitted, after a limited amount of experience in the field, to fill positions of importance and trust. The course also affords the education required to prepare the graduate for a responsible position among *men*, as well as among engineers.

The work is identical with that of the other courses during the first year. During the fall term of the sophomore year, students in this course work six hours each week on mechanical drawing, and four hours in the physical laboratory. In the first part of the last term of this year the afternoons are given to physical and chemical laboratory practice, each student devoting ten hours per week to the laboratories. During the last part of this term, the subject of land surveying is taken up, four hours each week being devoted to recitation work and three afternoons or one whole day each week being given to practical surveying in the field, where the student becomes familiar with the use and proper care of the instruments, and puts into practice the problems of the text-book so far as is possible in actual surveys.

During the first term of the junior year, the subject of railroad surveying is taken up by means of lectures and recitations. From these the student obtains a knowledge of the theory of railroad curves, switches, turnouts, slope-stakes, the calculation of earth-work, levelling, resistance to trains offered by grades and curves, and the construction of country roads, streets, and pavements. The methods of the class-room, so far as possible, are applied in the field by the execution of the preliminary and final surveys of a railroad from the college buildings to some point on the Maine Central Railroad, together with the necessary drawings, calculation of earth-work and estimate of the cost of building and equipping.

The subject of Applied Mechanics is taken up the last term of this year; in this the students receive a thorough training in the principles underlying construction, illustrated as far as possible by practical examples, in which these principles are applied. During

this term, each student in the class works two hours each day in the drawing room, where isometric, cabinet, and perspective projection is taken up by means of lectures and problems drawn by the students.

During the first term of the Senior year, an extended topographical survey, with the plane table and stadia measurements, is made, based upon a previous trigonometrical determination of the principal points. During this term, the students are also taught the use of the current meter, and apply their knowledge in the actual measurement of the volume of the Stillwater river.

In the recitation room, during this term, the principles of hydraulics as applied in engineering practice are taken up by means of lectures. The strength of materials, their durability, preservation, and fitness for special purposes, and the theories of ties, struts, beams, and arches are fully treated.

Stone cutting is taken up this term, by lectures and practical problems, each student being required to make a complete set of working drawings of the most common forms of masonry arches.

Six weeks are devoted to sanitary engineering, especial attention being given to ventilation, heating, purity of water supply, and the proper drainage of houses and towns.

The first part of the last term of this year is devoted to the theory of foundations, retaining walls, and roof and bridge trusses, while the last part is given to the application of the principles already learned, to the designing and calculation of various kinds of engineering structures, and to making out estimates and specifications.

#### MINERALOGY AND GEOLOGY.

Mineralogy is taught by an introductory course of lectures, followed by laboratory practice in the determination of minerals and rocks, especial attention being given to their value for building purposes. This is immediately followed by a course of lectures in geology, together with excursions for the purpose of studying the rocks *in situ*, and also superficial deposits. Critical examinations are made in various railroad cuts of the hardness, slaty structure, jointed structure, etc., as bearing upon the cost of excavation.

## ASTRONOMY.

In the last part of the spring term, Descriptive Astronomy is taken by the students of the Junior Class, and Practical Astronomy in the first term, Senior year.

The course in Practical Astronomy is designed to enable students to determine with accuracy geographical positions. The principal instruments employed are the chronometer, sextant, transit, and for work of precision, the Repsold verticle circle, an instrument made in Hamburg, Germany, for this institution. Practical instruction is given in the use of these instruments, and in the most approved methods of reducing observations for the determination of latitude and longitude.

Students in this department on the completion of the full course and the presentation of a satisfactory thesis, receive the degree of Bachelor of Civil Engineering. Three years later, on proof of professional work and the presentation of a satisfactory thesis the degree of Civil Engineer is conferred.



## COURSE IN MECHANICAL ENGINEERING.

## FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Solid Geometry. (12 w.)	Algebra. (6 w.)
Algebra. (4 w.)	Trigonometry. (14 w.)
Rhetoric. (4)	Botany.
Reading and Analysis of Authors.	French.
(1)	P. M. Mechanical Drawing. (F. of T.)
Physiology.	Laboratory Botany. (L. of T., (2)
P. M. Free-Hand Drawing. (2)	History. (L. of T.) (1)
Dissecting. (1)	Analysis of Authors. (L. of T.) (1)
General History. (1)	

## SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Descriptive Geometry.	Analytical Geometry.
General Chemistry.	Descriptive Geometry. (F. of T.)
French. (2)	Mechanical Drawing. (L. of T.)
German. (3)	Physics
Physics.	French. (3)
P. M. Carpentry. (3)	German (2)
Laboratory Physics. (2)	P. M. Laboratory Physics. (2)
	Forge Work. (3)

## THIRD YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Calculus. (3)	Calculus. (F. of T.)
Link and Valve Motion. (2)	Descriptive Astronomy. (L. of T.)
German. (2)	{ Isometric and Cabinet Projection.
Elements of Mechanism. (3)	{ and Machine Design. (3)
Kinematics.	German. (2)
P. M. Machine Work. (3)	Logic.
{ Laboratory Physics or	Mechanics.
{ Shop Work. (2)	P. M. Machine Work. (3)
	{ Laboratory Physics or
	{ Shop Work. (2)

## FOURTH YEAR.

<i>First Term.</i>	<i>Second Term.</i>
Steam Engine.	Hydraulic Engineering.
Practical Astronomy.	Steam Engineering
Political Economy and International Law.	U. S. Constitution and Business Law.
P. M. Mechanical Drawing.	Geology and Mineralogy.
	P. M. Machine Designing and Thesis Work.

## EXPLANATORY STATEMENTS.

It is the design of this course to give such a knowledge of **Mathematics, Mechanics, Principles of Mechanism, Drawing, and Manual Art** as shall enable the student successfully to enter practical life as an engineer, with the same thorough education in subjects required to fit him for the general duties of life as is afforded by the other courses.

The first two years' work is identical with that of the students in Civil Engineering except that carpentry and forge work are taken the second year in place of part of the drawing. In the junior year, the first term is devoted to the geometry of machinery, showing the students how different motions may be obtained independently of the power required. Special attention is here given to the subject of gearing, and a full set of problems worked out, illustrating cases commonly occurring in practice. Instruction is also given by lectures and text-book, on other methods of transmitting motion, as by belts, cams, couplings, and links. Considerable time is given to the study and designing of the various valve and link motions used on the steam engine. During the second term of the junior year, instruction is given in analytical mechanics, and the laws of the strength of materials, the student being required to design machine details in accordance with those laws.

The first part of the first term, senior year, is employed in studying the laws of the expansion of steam and their influence upon the construction of steam engines, the subject being illustrated by experiments on the shop engine, with the aid of an indicator. During the remainder of the term, the students are engaged in designing engines and other machines, and in making detail drawings of the same, such as would be required to work from in the shop.

During the last term, senior year, the study of steam engineering is continued in its application to the construction of steam boilers. In connection with this subject the student is required to design a steam boiler in all its details. The subject of hydraulics is taken up briefly, by text-book work in hydro-mechanics, and the principles applied to the solution of practical problems.

## SHOP WORK.

The first term of the sophomore year, two hours of each day are devoted to work in carpentry, special attention being given to

accuracy of workmanship. Students are encouraged in every way to make articles of practical use.

During the second term of the same year, the student receives instruction in forge work, including the welding and tempering of steel. Each student is required to make a set of cold chisels and lathe tools for future use in machine work. A course in machine work during the first term of the junior year gives the student practice in the various methods of shaping and fitting metals by the use of the chisel, hack-saw and file, engine lathe, shaping machine, planer and milling machine. During their second term, the sophomore students in this course take turns in running the shop engine, and are taught the rules of safety and economy in this branch of Engineering. Instruction in wood turning and pattern making is given during the senior year. There is also a course in foundry work in which the student is taught molding and casting. Physical laboratory practice engages the student two afternoons each week throughout the year.

#### DRAWING.

The work in drawing commences with a course in Free-Hand and Elementary Mechanical Drawing, extending through the freshman year.

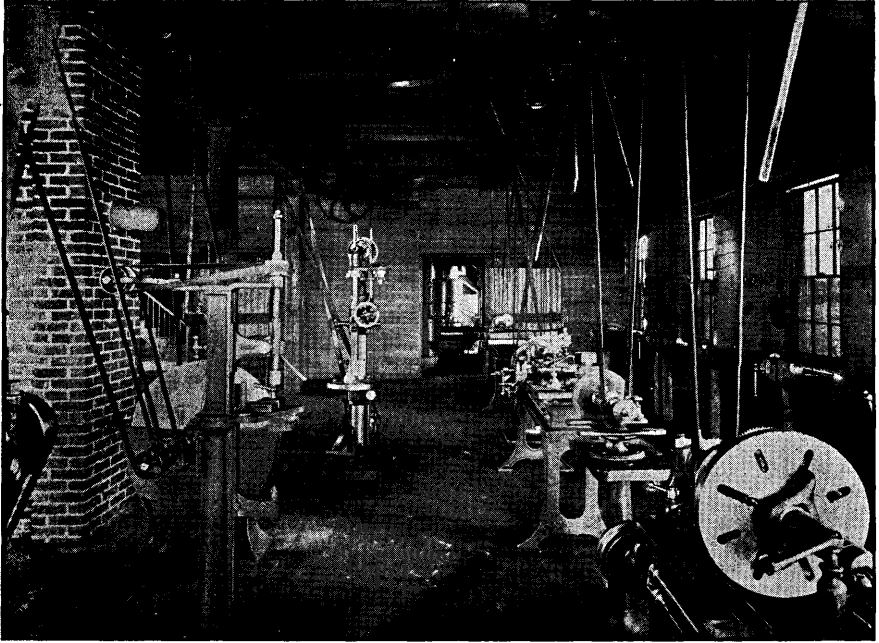
The first term of the junior year, the student spends the time allotted to drawing in working out practical problems on the construction of gear teeth, cams, etc., and in elementary practice in line-shading and tinting.

The second term of this year is devoted to isometric projection. During this term the student prepares an original design of some machine makes working drawings of its details on tracing cloth, and finally prepares copies by the blue-print process. The drafting of the senior year consists of making calculations for designs of engines and boilers, the construction of the necessary working drawings, and making thesis drawings.

The remarks under Course in Civil Engineering, with regard to Astronomy, Mineralogy and Geology, apply also to this course and to them reference is made.

Theses are required of all students as a condition of graduation, and must be on some subject directly connected with Mechanical Engineering.

Students in this course receive the degree of Bachelor of Mechanical Engineering upon graduation, with full degree of Mechanical Engineer three years afterwards upon presentation of a satisfactory thesis and proof of professional work or study.



MACHINE ROOM.



## COURSE IN CHEMISTRY.

## FIRST YEAR.

*First Term.*

Solid Geometry. (12 w.)  
 Algebra. (4 w.)  
 Rhetoric. (4)  
 Reading and Analysis of Authors.  
 (1)  
 Physiology.  
 P. M. Free-Hand Drawing. (2)  
 Dissecting. (1)  
 General History. (1)

*Second Term.*

Algebra. (6 w.)  
 Trigonometry. (14 w.)  
 Botany.  
 French.  
 P. M. Mechanical Drawing. (F.  
 of T.)  
 Laboratory Botany. (L. of T.) (2)  
 History. (L. of T.) (1)  
 Analysis of Authors. (L. of T.) (1)

## SECOND YEAR.

*First Term.*

General Chemistry.  
 Botany. (Cryptogamic.)  
 French. (2)  
 German. (3)  
 Physics.  
 P. M. Laboratory Physics. (2)  
 Laboratory Botany. (2)

*Second Term.*

Analytical Chemistry.  
 Physics.  
 French. (3)  
 German. (2)  
 P. M. Laboratory Physics. (2)  
 Analytical Chemistry. (3)

## THIRD YEAR.

*First Term.*

Analytical Chemistry.  
 Chemistry. (3)  
 German. (2)  
 Invertebrate Zoology.  
 P. M. Analytical Chemistry.

*Second Term.*

Chemistry. (3)  
 German. (2)  
 Logic.  
 Entomology. (F. of T.)  
 Descriptive Astronomy. (L. of T.)  
 P. M. Laboratory Work, Zoology  
 and Entomology. (2)  
 Analytical Chemistry. (3)

## FOURTH YEAR.

*First Term.*

Chemistry.  
 Psychology.  
 Comparative Anatomy.  
 Political Economy and Interna-  
 tional Law.  
 P. M. Comparative Anatomy. (2)  
 Analytical Chemistry. (3)

*Second Term.*

Chemistry.  
 Psychology.  
 U. S. Constitution and Business Law.  
 Geology and Mineralogy.  
 P. M. Analytical Chemistry and  
 Thesis Work.

## EXPLANATORY STATEMENTS.

This course aims to supply a want felt by students who wish to enter certain industries in which a somewhat extensive knowledge of Chemistry is important. The first two years are mainly like those of the other courses, Qualitative Analysis being, however, obligatory for these students in the second term of the Sophomore year.

During the Junior year, daily recitations are held in advanced Inorganic Chemistry. In the Senior year, advanced Organic Chemistry is taken up. Sophomores have one exercise a week in Elementary Chemical experiments. The afternoons are devoted to Quantitative Chemical Analysis by the Junior and Senior students in the course. The work consists of the most useful gravimetric and volumetric methods, beginning with the simple estimations, which are followed by more complex analysis of alloys, minerals, fertilizers, farm products, &c. A short course in the assay of gold and silver is also given.

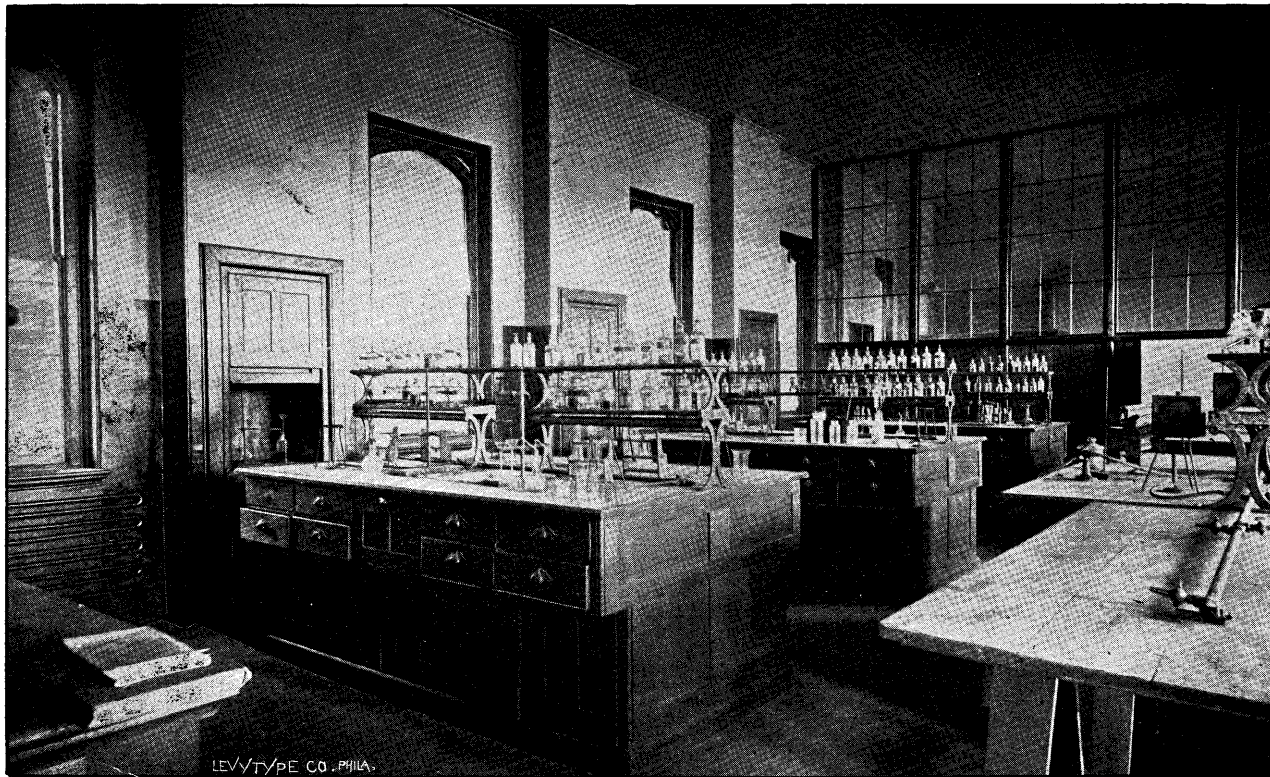
The class-room text-books used by this department are: Remsen's Chemistry and Naquet's Principes de Chimie. In the Laboratory are used: Craft's Qualitative Chemical Analysis, Fresenius' Quantitative Chemical Analysis, Frankland's Agricultural Chemical Analysis, Flint's Examination of Urine, Rickett's Notes on Assaying, Appleton's Quantitative Analysis, and Classen's Quantitative Analysis.

Valuable books of reference are found in the library.

Students taking Qualitative Analysis must furnish a deposit of at least five dollars when they begin: those taking Quantitative analysis are required to deposit at least seven dollars. Students taking the course in Chemistry or an extended course in Quantitative Analysis are expected to provide themselves with a small platinum crucible.

The students, after passing all the required examinations and presenting satisfactory theses upon some chemical subject, graduate with the degree of Bachelor of Science.

Post graduate and special students can make arrangements with the Professor of Chemistry for an advanced or special course of laboratory work and recitations.



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## COURSE IN SCIENCE AND LITERATURE.

## FIRST YEAR.

*First Term.**Second Term.*

Rhetoric. (4)	French.
Reading and Analysis of Authors. (1)	Botany.
Physiology.	Algebra. (6 w.)
Solid Geometry. (12 w.)	Trigonometry. (14 w.)
Algebra. (4 w.)	P. M. Mechanical Drawing. (F. of T.)
P. M. Free-Hand Drawing. (2)	Laboratory Botany. (L. of T.) (2)
Dissecting. (1)	General History. (L. of T.) (1)
General History. (1)	Analysis of Authors. (L. of T.) (1)

## SECOND YEAR.

*First Term.**Second Term.*

Botany. (Cryptogamic.)	Physics.
General Chemistry.	Analytical Chemistry.
French. (2)	French. (3)
German. (3)	German. (2)
Physics.	P. M. Laboratory Physics. (2)
P. M. Laboratory Physics. (2)	Analytical Chemistry. (3)
Laboratory Botany. (2)	
General History. (1)	

## THIRD YEAR.

*First Term.**Second Term.*

German. (2)	German. (2)
Anglo-Saxon. (3)	Philology of the English Language. (3)
English and American Literature.	Logic.
Invertebrate Zoology.	Entomology. (F. of T.)
P. M. Laboratory Physics or Chemistry. (2)	Descriptive Astronomy. (L. of T.)
Analysis of Authors and Historical Reading. (3)	Literary Work.
	P. M. Laboratory Work in Physics or Chemistry. (2)
	Laboratory Work in Zoology and Entomology. (2)
	Literary Work. (1)

## FOURTH YEAR.

*First Term.**Second Term.*

History of Civilization.	Horticulture. (F. of T.) (3)
Psychology.	Landscape Gardening. (L. of T.) (3)
Comparative Anatomy.	Psychology.
Political Economy.	U. S. Constitution.
P. M. Elements of Municipal Law. (1)	International Law.
Comparative Anatomy. (2)	Geology and Mineralogy.
Literary Work. (2)	P. M. Literary and Scientific Work.

## EXPLANATORY STATEMENTS.

The course in Science and Literature is designed for those young men and women who intend to pursue professions or callings for which the other courses do not especially fit them.

This course is generally parallel with that of the ordinary classical college except that a more complete study of the mother-tongue and of the natural sciences takes the place of the work done in Latin and Greek.

The aim in this, as in the other curricula of the college, is to educate in the etymological and best sense of the word; to draw the student out, to train and develop his powers of observation and reason, and to avoid so far as possible what is familiarly known as *cram*. With this end in view, the instruction by text-books and lectures, as will be seen by reference to the foregoing scheme, is closely associated with constant work in the library, laboratories, and field; every means available being employed to bring the student into direct contact with the subject-matter of his studies.

In the study of Anglo-Saxon and English Philology, the student becomes familiar with the origin of our language, its place in the Teutonic family, its relation to the other Indo-Germanic tongues; the sources whence it has been enriched, and the circumstances that have combined to bring it to its present fullness and strength. In Rhetoric, the most important part of the work is held to be the acquirement on the part of the student of an ability to express himself easily and well, hence much attention is given to written exercises, themes, and essays.

In Literature, following out the idea that the best way to become acquainted with an author is to study his productions, the text-book is made subordinate to the library work to which much attention is given during the entire course.

The soundest basis for a liberal education lies in a careful study and a clear knowledge of our own noble language and literature, and it is believed that the line of studies above set forth, supplemented by the courses in French and German, furnishing as it does a broad foundation for a true and generous culture, cannot fail to be of the greatest advantage to the young men and women of our State.

Upon graduation the students in Science and Literature receive the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on the presentation of a thesis embodying original work or investigation, they become entitled to the degree of Master of Science.

CLASS HOURS—FIRST TERM.

HOURS.	SENIORS.	JUNIORS.	SOPHOMORES.	FRESHMEN.
7.45 A. M.	Chapel Services.	Chapel Services.	Chapel Services.	Chapel Services.
8.00 A. M.	Stock Feeding and Dairying, I. Civil Engineering, II. Steam Engine (2), III. Chemistry, IV. History of Civilization, V.	German (2). Horticulture (3), I. Elements of Mechanism (3), III. Chemistry (3), IV. Anglo-Saxon (3), V.	Botany (Cryptogamic), I, IV, V. Descriptive Geometry, II, III.	Solid Geometry (12 w.) Algebra (4 w.)
9.00 A. M.	Psychology, I, IV, V. Practical Astronomy, II, III.	English and Amer. Literature, I, V. Field Book and R. R. Surveying, II. Kinematics, III. Anal. Chemistry, IV.	General Chemistry.	Rhetoric (4). Reading and Analysis of Authors (1).
10.00 A. M.	Comparative Anatomy, I, IV, V. Stereotomy (F. of T.), II. Sanitary Engineering (L. of T.), II. Steam Engine (3), III.	Agricultural Chemistry, I. Calculus (3), II, III Link and Valve Motion (2), III. Anal. Chemistry, IV.	French (2). German (3).	
11.00 A. M.	Political Economy. Business Law.	Invertebrate Zoology, I, IV, V. Calculus (3), II, III. Link and Valve Motion (2), III.	Physics.	Physiology.
P. M.	Comparative Anatomy (2), I, IV, V. Horticulture and Farm Experiments, (2), I. Literary Work (1), I. Higher Surveying, II. Mechanical Drawing, III. Analytical Chemistry (3), IV. Literary and Scientific Work (3), V. Military Exercises.	Horticulture (2), I. Anal. Chemistry (3), I. Field Work and Drawing, II, or { Field Work and Drawing (3), II. { Laboratory Physics (2), II. Machine Work (3), III. Lab. Physics or Shop Work (2), III Analytical Chemistry, IV. Lab. Physics or Chemistry (2), V. Analysis of Authors (2), V. Military Exercises.	Laboratory Physics (2). Laboratory Botany (2), I, IV, V. Mechanical Drawing (3), II Carpentry (3), III. General History (1), V. Military Exercises.	Free-Hand Drawing (2). Dissecting (1). General History (1). Military Exercises.

NOTE.—Roman numerals refer to the several courses: I, Agriculture; II, Civil Eng.; III, Mech. Eng.; IV, Chemistry; V, Science and Lit.

CLASS HOURS—SECOND TERM.

HOOURS.	SENIORS.	JUNIORS.	SOPHOMORES.	FRESHMEN.
7.45 A. M.	Chapel Services.	Chapel Services.	Chapel Services.	Chapel Services.
8.00 A. M.	Stock Breeding and Veterinary Science, I. Civil Engineering, II. Hydraulic Engineering, III. Chemistry, IV. Horticulture (F. of T.) (3), V. Landscape Gardening (L. of T.) (3), V	German (2). Horticulture (F. of T.) (3), I. Landscape Gardening (L. of T.) (3), I. Isometric and Cabinet Projection and Machine Design (3), III. Chemistry (3), IV. Philology of English Language (3), V.	Physics.	Botany.
9.00 A. M.	Psychology, I., IV., V. Designing, II Steam Engineering, III. Chemistry (2), IV.	Logic.	Analytical Chemistry, I., IV., V. Analytical Geometry, II., III.	French.
10.00 A. M.	U. S. Constitution. International Law.	Entomology (F. of T.), I, IV., V. Calculus (F. of T.), II, III. Descriptive Astronomy, (L of T.)	Analytical Chemistry, I., IV, V. Descr'pt'Ve Geometry (F. of T.), II, III. Surveying (L. of T.), II. Mechanical Drawing (L of T.) III.	
11.00 A. M.	Geology and Mineralogy.	Agricultural Engineering, I. Mechanics of Engineering (F. of T.), II. Graphic Statics (L of T.), II. Mechanics, III. Chemistry, IV. Literary Work, V.	French (3) German (2).	Algebra (6 w.) Trigonometry (14 w.)

<p>P. M.</p>	<p>Thesis Work, I.          Designing and Thesis Work, II.          Machine Designing and Thesis Work,          III.          Analytical Chemistry, IV.          Literary and Scientific Work, V.          Military Exercises.</p>	<p>Laboratory Work, Zoology and Entomology (2), I, IV, V.          Horticulture (1), I.          Analytical Chemistry (2), I.          Isometric and Cabinet Projection (3), II          Laboratory Physics or Isometric and Cabinet Projection (2), II.          Machine Work (3), III.          Laboratory Physics or Shop Work (2), III.          Analytical Chemistry (3), IV.          Laboratory Physics or Chemistry (2), V.          Literary Work (1), V.          Military Exercises.</p>	<p>Laboratory Physics (2).          Analytical Chemistry (3), I, IV., V          Analytical Chemistry (F. of T.) (3), II.          Field Work in Surveying (L. of T) (3), II          Mechanical Drawing and Forge Work (3), III.          Military Exercises.</p>	<p>Mechanical Drawing (F. of T.)          Laboratory Botany (L. of T) (2).          History (L. of T.) (1).          Analysis of Authors (L. of T) (1)          Military Exercises.</p>
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### LABOR.

In the several courses, a large amount of practice is required in connection with the theoretical instruction of the class-room. Such labor is purely educational and for it no pecuniary compensation is made.

Nearly all the work in the chemical, botanical and zoological laboratories, in the drawing-rooms, in the shop, and a large part of that in the gardens and fields is of this nature. While a small amount of non-educational labor is obtainable, the principal prominence is given to that which has educational value.

### MILITARY INSTRUCTION.

Thorough instruction in Military science is given by an officer of the United States army, detailed for that purpose from the active list by the Secretary of War.

By requirement of the National Government all able-bodied male students receive instruction in this department. In addition to the practical work in drill, guard-mounting, rifle-practice, castrametation, and hasty fortifications, theoretical instruction is given by recitations in tactics, and by lectures on the art and science of war. The corps is supplied with the Springfield breech-loading rifles by the general government, which also furnishes five thousand rounds of ammunition for target practice yearly.

The uniform is a dark blue blouse with the State of Maine buttons and gilt braid on the cuffs; the trousers are of a lighter blue, and the caps blue with a gold wreath ornament. The shoulder straps and chevrons are of red and gold.

The students are required to wear their uniforms during the military exercises, but may and usually do wear them about their ordinary college work. The uniform costs about eighteen dollars and is an inexpensive and serviceable suit.

### LOCATION.

The college has a pleasant and healthful location, between the villages of Orono and Stillwater, about a mile from each. Stillwater river, a tributary of the Penobscot, flows in front of the buildings, forming the western boundary of the college farm, and adding much to the beauty of the surrounding scenery.

The Maine Central Railroad, over which trains pass many times each day, has a station at the village of Orono. The college is within nine miles of the city of Bangor, and is consequently easily accessible from all parts of the State.

#### FARM AND BUILDINGS.

The college farm contains three hundred and seventy acres of land, of fair natural productiveness, and of sufficient diversity of soil, to adapt it to the experimental purposes of the institution.

Oak Hall contains forty-eight rooms, and has connected with it a boarding-house. This and the "White" and "Goddard" houses occupied by student-societies, furnish desirable accomodation: for one hundred and twenty-five students.

The chemical laboratory contains two apparatus rooms, a lecture room, a weighing room, a recitation room, and rooms for analytical and other purposes, and is in all respects admirably adapted to the wants of the chemical department.

The Shop is amply equipped for instruction in the working of wood and of iron, including the processes of carpentry, wood turning, filing, forging, lathe work, and the casting of metals.

Coburn Hall is occupied by the departments of Natural History and Agriculture. In addition to the rooms needful for the two departments named, it contains a large audience-room, a commodious room for the College Library, and a room especially arranged for a Physical Laboratory.

Wingate Hall furnishes abundant room and facilities for instruction in the departments of Civil and Mechanical Engineering. It also contains two recitation rooms, a physical apparatus room, a physical lecture-room, and commodious rooms for the Young Men's Christian Association.

The Horticultural Building and Plant House and the Dairy House are supplied with needful apparatus and meet very perfectly the requirements for which they were constructed.

The College is supplied in all its departments with apparatus sufficient to meet fully the requirements of instruction.

The library, of which the nucleus was obtained by the generosity of ex-Governor Coburn, has recently received valuable additions through contributions made by other friends of the college and through purchase. The present number of volumes, about seven



thousand, is continually receiving accessions of standard works in literature and science. A card-catalogue of all the books has been made, and the library has become a most important auxiliary to all departments of instruction.

The following periodicals are supplied by the college to the library : Agricultural Science, American Garden, American Geologist, American Journal of Mathematics, American Journal of Psychology, American Journal of Science, American Machinist, Atlantic Monthly, Botanical Gazette, Bulletin of Torrey Botanical Club, Century Magazine, Cosmopolitan, Cultivator and Country Gentleman, Edinburgh Review, Education, Educational Review, Electrical Engineer, Electrical Enterprise, Electrical World, Engineer (N. Y.), Engineer (London), Engineering News, Forum, Garden and Forest, Gardener's Chronicle, Harper's Magazine, Journal of Analytical Chemistry, Journal de Pharmacie et de Chimie, Journal of the Franklin Institute, Journal of the Royal Agricultural Society, Magazine of American History, Manufacturer and Builder, Messenger of Mathematics, Nation, New England Magazine, Nineteenth Century, North American Review, Philosophical Review, Political Science Quarterly, Popular Science Monthly, Railroad and Engineering Journal, Science, Transactions of the American Society of Civil Engineers, Western Electrician.

The following publications are kindly sent by the publishers to the library :

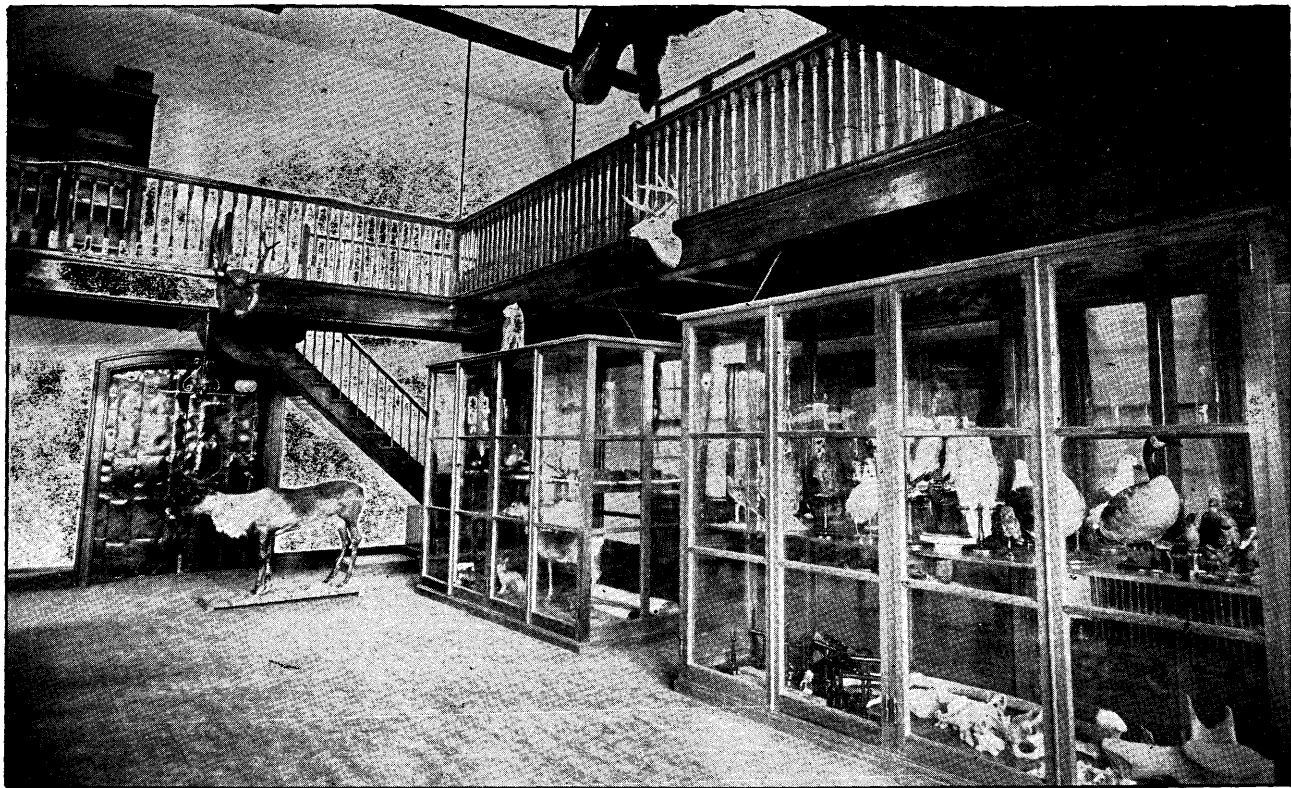
Experiment Station Record, Industrialist (published by Kansas State College), Official Gazette of the United States Patent Office, Sanitary Inspector (published by the Maine Board of Health).

#### READING ROOM.

The reading room is supplied with a number of valuable newspapers and periodicals. Grateful acknowledgment is herewith made for the following papers, generously sent by the proprietors to the college :

American Cultivator, Aroostook Republican, Gospel Banner, Kennebec Journal, Lewiston Journal, Maine Farmer, Maine Industrial Journal, Oxford Democrat, Piscataquis Observer, Portland Transcript, Somerset Reporter, Bangor Daily Whig and Courier, Zion's Herald, Bangor Daily Commercial, Springvale Advocate, Eastport Sentinel, Temperance Record, The Industrialist (Kansas), Old Town Enterprise, Boston Evening Transcript, Bangor Daily News,





MUSEUM.

Aroostook Times, National Farmer, The Farmer's Home, The Star Herald, Rural New Yorker, Home Protector, Oxford County Advertiser, Prairie Farmer, Delaware Farm and Home, Machias Union, Brunswick Telegraph, Stationary Engineer.

The following papers are furnished by subscription, principally by the students :

American Machinist, The Engineer, Cultivator and Country Gentleman, Scientific American, Eastern Argus (furnished by S. W. Gould), Lewiston Evening Journal (furnished by E. W. Danforth), Journal of Education, Popular Science News, Boston Sunday Herald, Portland Express (furnished by C. G. Cushman), Boston Record, Portland Daily Press, Harper's Weekly, Science, Puck, Judge, Mirror and Farmer, Rockland Free Press, Science, Morning Star, American Agriculturist, New York Sun, Auburn Daily Gazette, Army and Navy Register.

#### CABINET.

The natural history collections of the college include about nine hundred named and mounted species of the flowering plants of Maine, the Blake Herbarium consisting of foreign and indigenous phenogams and cryptogams numbering about fourteen thousand specimens, the Ellis collection of North American fungi of twenty-three hundred species, a collection of several hundred specimens of marine algæ and several small miscellaneous collections, a collection of sections of tropical species of wood presented by the Department of Agriculture at Washington, and a similar collection of the United States species from the Census Bureau.

The college also has a working collection of carefully selected forms representing the prominent groups of the animal kingdom ; a large and valuable collection of Maine insects, carefully mounted and authentically named, and a fine collection of marine animals in alcohol, mostly from the coast of Maine, donated to the college by the United States Fish Commissioner. The above collections, together with charts, diagrams, skeletons, models, microscopes and other apparatus for illustrating the studies in natural history, are on exhibition in Coburn Hall.

On exhibition also are a good series of the more common minerals and ores, supplemented by a collection presented by the National Museum, a collection of building stones from many of the Maine quarries, and a collection presented by the Smithsonian Institution,

together with a series of microscopical sections of building stones, given by G. P. Merrill, M. S., Ph. D. In the same room is exhibited a series of typical fossils which illustrate the various geological horizons, together with a collection of Indian stone implements, and various curiosities presented by the friends of the Institution.

#### PUBLIC WORSHIP.

All students are required to attend daily prayers at the college, and public worship on Sunday at some one of the neighboring churches, unless excused by the President.

#### YOUNG MEN'S CHRISTIAN ASSOCIATION.

The students of the college maintain an active organization of the Young Men's Christian Association, holding meetings weekly.

Its elevating influence in the college is clearly manifest especially in the earnest and high moral and Christian life of those who constitute its membership.

#### EXPENSES.

Tuition is free and room-rent in Oak Hall is also free. For students in Mechanical Engineering, the cost of material and repair of tools for the course of instruction in the vise shop is ten dollars; in the forge shop, nine dollars; in the wood shop, four dollars.

Laboratory expenses are at cost of glassware broken, injury to apparatus, and chemicals used. A deposit of five dollars is required of students entering upon a term's work in Qualitative Analysis, and of seven dollars per term from students in Quantitative Analysis.

Students residing too far from the college to *live* at home are required to room and board at the college, unless special permission to live elsewhere is granted by the President. Students receiving such permission pay fuel rent as though residing at the college.

Bedding and furniture must be supplied by the students, who also furnish their own lights. Tables, chairs, bedsteads, sinks and husk mattresses can generally be purchased at the college at reduced rates.

The price of board will be at cost, and will be determined from term to term. In the history of the college, the price has ranged between \$2 60 and \$3.12 per week; washing averages not more than sixty cents per dozen.

The warming by steam of single rooms (each suitable for two occupants) has averaged for the past six years about eleven dollars a room for each term. The expense of heating recitation rooms and rooms for general purposes has been about four dollars a term for each student, and the incidental expenses, including pay for the services of janitor, pay for bringing mail, for cleaning and renovating rooms, for general repairs, etc., have been between three and four dollars per term for each student.

From the items given, with an allowance of a few dollars a year for necessary text-books, quite an accurate estimate of needful expenses can be made.

The college term bills are payable, one-half at the commencement, and the remainder at or before the close of each term.

As security for the payment of college bills, a bond of one hundred and fifty dollars with satisfactory securities is required. A blank form of bond will be given with the ticket of admission.

#### MEANS OF DEFRAYING EXPENSES.

The summer vacation, which includes the months of July and August, is at a season when farm labor is most profitable, and when students in engineering are most likely to secure remunerative employment.

The winter vacation of six weeks, too short to allow an opportunity to teach without trespassing upon term-time, is long enough to turn to profitable account by a temporary engagement. Students who fully utilize these two periods for earning money can thus cancel a large fraction of their necessary expenses.

#### SCHOLARSHIPS.

The Trustees make provision for the establishment of scholarships by any individual or society by payment to the Treasurer of the college of a sum not less than seven hundred and fifty dollars.

#### KIDDER SCHOLARSHIP.

The first scholarship under the plan indicated above has been given by Frank E. Kidder, C. E., class of 1879, of Denver, Colorado, and now yields thirty dollars a year, for a meritorious student of the Junior class.

### **REQUEST.**

Graduates will confer a favor by notifying the President of the College or the Corresponding Secretary of the Alumni Association, of any changes in their occupation or place of residence, and by giving information of any errors observed in the present catalogue.

## OFFICERS OF THE ALUMNI ASSOCIATION.

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### PRESIDENT.

PROF. H. M. ESTABROOKE, Orono.

### RECORDING SECRETARY.

FRED P. BRIGGS, Orono.

### CORRESPONDING SECRETARY.

RALPH K. JONES, Findlay, Ohio.

### TREASURER.

PROF. J. N. HART, Orono.

### NECROLOGIST.

L. H. MERRILL, Orono.

### CLASS SECRETARIES.

- 1872. E. J. HASKELL, Westbrook.
- 1873. J. M. OAK, Bangor.
- 1874. W. BALENTINE, Orono.
- 1875. E. F. HITCHINGS, Bucksport.
- 1876. E. M. BLANDING, Bangor.
- 1877. S. W. GOULD, Skowhegan.
- 1878. E. C. WALKER, Lovell.
- 1879. F. E. KIDDER, Denver, Col.
- 1880. A. H. BROWN, Old Town.
- 1881. C. L. MOOR, Hartland.
- 1882. W. R. HOWARD, Saxton's River, Vt.
- 1883. L. W. TAYLOR, Prescott, Arizona.
- 1884. G. H. ALLAN, Portland.
- 1885. J. N. HART, Orono.
- 1886. R. K. JONES, Findlay, O.
- 1887. D. W. COLBY, Orono.
- 1888. T. G. LORD, Skowhegan.
- 1889. C. G. CUSHMEN, Roanoke, Va.
- 1890. G. H. BABB, Honolulu, H. I.
- 1891. PRESCOTT KEYES, JR., Bar Harbor.





# GRADUATES.

## CLASS OF 1872.

<i>Name and Occupation.</i>	<i>Residence.</i>
Benjamin F. Gould, C. E., Real Estate and Insurance,	Hollister, California
George E. Hammond, C. E., Civil Engineer,	Navy Yard, Portsmouth, N. H.
Edwin J. Haskell, B. S., Silk Manufacturer . . . . .	Westbrook
Hedde Hilliard, C. E., Civil Engineer . . . . .	Old Town
Eber D. Thomas, B. S., Farmer and Surveyor,	Grand Rapids, Mich.
George O. Weston, B. S., Farmer . . . . .	Norridgewock

## CLASS OF 1873.

Russell W. Eaton, C. E., Agent Cabot Mills . . . . .	Brunswick
George H. Hamlin, C. E., Professor of Civil Engineering,	Maine State College, Orono
Fred W. Holt, C. E., Supt. G. S. R. R. . . . .	St. George, N. B.
John M. Oak, B. S., Merchant . . . . .	Bangor
*Charles E. Reed, C. E., Agent Columbia Bridge Co. .	Dayton, O.
Frank Lamson Scribner, B. S., Professor of Botany and Horticulture, and Director Experiment Station, University of Tennessee . . . . .	Knoxville, Tenn.
Harvey B. Thayer, B. S., Druggist. . . . .	Presque Isle

## CLASS OF 1874.

William A. Allen, C. E., Chief Engineer, M. C. R. R. . . .	Portland
Walter Balentine, M. S., Professor of Agriculture,	State College, Orono

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\* Deceased.

<i>Name and Occupation.</i>	<i>Residence.</i>
William H. Gerrish, B. S., M. D., Physician . . . . .	Royalton, Vt.
John I. Gurney, B. S., Florist . . . . .	Dorchester, Mass.
Rodney D. Hunter, B. S., Insurance Agent . . . . .	Oakland, Cal.
Louise H. Ramsdell, B. S. (Mrs. Milton D. Noyes).. . . .	Atkinson

## CLASS OF 1875.

Solomon W. Bates, C. E., Solicitor of Patents and Mechanical Engineer, Portland	
Wilbur A. Bumps, C. E., M. D., Physician . . . . .	Dexter
*Samuel H. Clapp, C. E. Teacher . . . . .	Danvers, Mass.
Lewis F. Coburn, C. E., Civil Engineer . . . . .	Crescent City, Cal.
Charles F. Colesworthy, B. S., Merchant . . . . .	Portland, Oregon
*Charles F. Durham, C. E., Teacher . . . . .	Crescent City, Cal.
Alfred M. Goodale, B. S., Agent Boston Manufacturing Co., Waltham, Mass.	
Edson F. Hitchings, C. E., M. S., Instructor Natural Science, E. M. Con. Sem'y, Bucksport	
Whitman H. Jordan, M. S., Director Agricultural Experiment Station, Orono	
Edward D. Mayo, M. E., Mill Furnisher and Draughtsman, Minneapolis, Minn.	
Albert E. Mitchell, M. E., Mechanical Engineer, Erie R. R., Susquehanna, Pa.	
Allen G. Mitchell, C. E., Ass't Engineer, P. R. R., Pittsburg, Penn.	
*Fred L. Moore, B. S., Teacher . . . . .	California
Luther W. Rogers, B. S., Merchant . . . . .	Waterville
Minott W. Sewall, M. E., Mechanical Engineer, Babcock & Wilcox Boiler Co., New York, N. Y.	
George M. Shaw, C. E., Principal of Schools . . . . .	Oroville, Cal.
Wesley Webb, M. S., Editor Farm and Home, and President State College for Colored Students, Dover, Del.	
*Edgar A. Work, C. E. . . . .	U. S. Military Academy

## CLASS OF 1876.

Edmund Abbott, B. S., M. D., Physician . . . . .	Providence, R. I.
Charles P. Allen, B. S., Lawyer and Banker . . . . .	Presque Isle

<i>Name and Occupation.</i>	<i>Residence.</i>
Elbridge H. Beckler, C. E., Chief of Construction, Great Northern R. R.,	Helena, Mon.
Fred M. Bisbee, C. E., Druggist . . . . .	Wichita, Kansas
Edward M. Blanding, B. S., Editor and Publisher Maine Industrial Journal,	Bangor
Charles M. Brainard, B. S., Lumber Manufacturer . . .	Skowhegan
*George H. Buker, B. S., Druggist. . . . .	Presque Isle
Florence H. Cowan, B. S., Teacher . . . . .	Lynn, Mass.
Oliver Crosby, M. E., Treasurer and Manager, American M'f'g Co.,	St. Paul, Minn.
Vetal Cyr, B. S., Principal Madawaska Training School,	Fort Kent
James E. Dike, C. E., Civil Engineer Great Northern Railway, Davenport,	Wash.
*Willis O. Dike, B. S. . . . .	Gorham
Horace M. Estabrooke, M. S., A. M., Professor Rhetoric and Mod. Languages, State Col.,	Orono
Arthur M. Farrington, B. S., D. V. S., Chief of Div. of Animal Industry,	Washington, D. C.
George O. Foss, C. E., Ass't Engineer, N. P. R. R., Helena,	Mon.
William T. Haines, B. S., L. L. B., Lawyer. . . . .	Waterville
Henry F. Hamilton, B. S., D. D. S., Dentist . . . . .	Boston, Mass.
Newall P. Haskell, B. S., Farmer. . . . .	Orono
Edward S. How, M. E., Office Light House Board; Treas. Dept., Washington,	D. C.
Philip W. Hubbard, B. S., Nursery Business . . . . .	Alhambra, Cal.
Samuel M. Jones, M. E., Merchant. . . . .	Springfield, Mass.
Albert A. Lewis, B. S., Clergyman. . . . .	Bath
Herbert A. Long, M. E., Farmer. . . . .	Machias
Luther R. Lothrop, C. E., Division Engineer N. Pac. & Mon. R. R.,	Helena, Mon.
Nelson H. Martin, B. S., Merchant . . . . .	Ft. Fairfield
Charles E. Oak, M. E., Lumber Manufacturer and Merchant, Caribou	
George D. Parks, C. E., Lawyer and Civil Engineer, Fort Payne,	Ala.
Hayward Pierce, B. S., West Waldo Granite Works . .	Frankfort
Frank R. Reed, C. E., Carpenter. . . . .	Roxbury

\*Deceased.

<i>Name and Occupation.</i>	<i>Residence.</i>
Henry J. Reynolds, B. S., Druggist . . . . .	Eastport
Charles W. Rogers, M. E., Mechanical Engineer . . . . .	Chicago, Ill.
William L. Stevens, M. E., Flour Commission Merchant,	Minneapolis, Minn.
John H. Williams, B. S., Contractor & Surveyor, Elk River,	Minn.

## CLASS OF 1877.

Alvah D. Blackington, C. E., Chief Engineer,	Erie & Wyoming Railway, Dunmore, Pa.
Robert B. Burns, C. E., Resident Engineer, A. & P. R. R.,	Prescott, Arizona
Eugene H. Dakin, B. S., Sec'y and Treas., Industrial Pub. Co.,	Bangor
Edward F. Danforth, B. S., L. L. B., Lawyer . . . . .	Skowhegan
Augustus J. Elkins, B. M. E., Ass't Man. Eagle Roller Mill Co.	New Ulm, Minn.
Alicia T. Emery, B. S. . . . .	Orono
Samuel W. Gould, B. S., Lawyer . . . . .	Skowhegan
*Joseph C. Lunt, B. C. E., Civil Engineer, Mex. C. R. R.,	El Paso, Texas
Fred F. Phillips, B. S., Gen. Agent Equit. Ins. Co . . . . .	Bangor
*Samuel Shaw, B. M. E., Architectural Draughtsman,	Boston, Mass.
Frank P. Stone, B. S., Druggist . . . . .	Norway
Thomas J. Stevens, B. M. E., Druggist . . . . .	Portland
George E. Sturgis, B. C. E., Druggist . . . . .	Portland, Oregon
Charles E. Town, B. C. E., U. S. Surveyor . . . . .	Helena, Montana
James W. Weeks, B. M. E., Architect . . . . .	No. Des Moines, Iowa
Nellie E. Weeks, B. S., (Mrs. Llewellyn Spencer) . . . . .	Orono
Ivan E. Webster, B. S. . . . .	Orono

## CLASS OF 1878.

Emma Brown, B. S., Teacher, (Mrs. Charles Gilman) . . .	Enfield
Andrew J. Caldwell, B. M. E., Mech. Engineer, New York, N. Y.	
Cecil C. Chamberlain, B. S., Merchant . . . . .	Anoka, Minn.
Geo. E. Fernald, B. C. E., Salesman . . . . .	Chicago, Ill.
James Heald, B. S., City Engineer . . . . .	Seattle, Wash.

<i>Name and Occupation.</i>	<i>Residence.</i>
John Locke, Jr., B. S., Chief Clerk Freight Dept., M. C. R. R.,	Portland
Frank J. Oakes, B. C. E., Draughtsman . . . . .	Brooklyn, N. Y.
John C. Patterson, B. C. E., Ass't Engineer, N. P. R. R.,	Butte, Mon.
Winfield E. Tripp, B. C. E., L. L. B., Lawyer . . .	Ashland, Wis.
Edward C. Walker, B. S., Lawyer . . . . .	Lovell
Otis C. Webster, B. S., Druggist . . . . .	Augusta

## CLASS OF 1879.

Harry B. Bean, C. E. . . . .	Grafton, Mass.
Edward J. Blake, C. E., Chief Engineer, C. B. & Q. R. R.,	Chicago, Ill.
Simon P. Crosby, B. S., Lawyer . . . . .	St. Paul, Minn.
John D. Cutter, B. S., M. D., Physician. . . . .	Chicago, Ill.
Wilbur F. Decker, M. E., Mech. Engineer. . . . .	Minneapolis, Minn.
David A. Decrow, B. C. E., Ass't Sup't and Ass't Engineer,	Holly M'fg Company, Lockport, New York
Willis E. Ferguson, B. S., Farming and Real Estate,	Alhambra, Cal.
Charles W. Gibbs, C. E., Civil Engineer,	Rio Grande, S. R. R., Ridgeway, Col.
Annie M. Gould, B. S., (Mrs. Loomis F. Goodale),	St. Joseph, Mo.
*Nellie M. Holt, B. S., Teacher . . . . .	Orono
Frank E. Kidder, C. E., Architect. . . . .	Denver, Col.
Mark D. Libby, B. C. E., Lawyer . . . . .	Kingman, Kan.
*Charles S. Loring, B. M. E., Machinist. . . . .	Lewiston
George P. Merrill, M. S., Ph. D., Curator Dept. of Geology,	Nat. Museum, Washington, D. C.
John W. Meserve, B. M. E., Chief Draughtsman,	Yale and Towne M'fg Co., Stamford, Conn.
Arthur L. Moore, B. S., Farmer . . . . .	Waterville
Charles A. Morse, C. E., Div. Engineer, A. T. & S. F. R. R.,	Topeka, Kan.
Fred D. Potter, B. M. E., Engineer and Contractor,	New York, N. Y.

<i>Name and Occupation.</i>	<i>Residence.</i>
Alton J. Shaw, B. M. E., President and Superintendent Shaw Electric Crane Co., Muskegon, Mich.	
Percia A. Vinal, M. S., (Mrs. Albert White)	Orono
Geo. O. Warren, B. S., Farmer	Fryeburg
Herbert Webster, B. S., Nursery Business	Alhambra, Cal.

## CLASS OF 1880.

Horace W. Atwood, B. S., D. V. S., Real Estate Broker, Brockton, Mass.	
James M. Bartlett, M. S., Analytical Chemist, Agricultural Experiment Station, Orono	
Albert H. Brown, B. S., Banker	Old Town
Marcia Davis, B. S., (Mrs. Joseph D. Stevens)	Denver, Col.
Fred B. Elliot, B. S., Farmer	Bowdoin
Sarah P. Farrington, B. S., (Mrs. George P. Merrill), Washington, D. C.	
Charles W. Fernald, B. S., Merchant	So. Levant
Fred W. Fickett, M. S., Farmer and Lawyer	Galveston, Texas
George W. Lufkin, B. C. E., Ass't Engineer W. & N. R. R., Wilmington, Del.	
Frank A. Mansfield, M. S., Clergyman	Boston, Mass.
Annie A. Matthews, B. S., Teacher	Stillwater
Henry W. Murray, B. C. E., Farmer and Teacher	Napa, Cal.
Franklin R. Patten, C. E., Supt. Iron Works	Wyebrooke, Pa.
Charles T. Pease, B. S., Division Engineer C. K. & N. R. R., Denver, Colorado	
James F. Purington, B. S., Railway Postal Clerk	Bath

## CLASS OF 1881.

Henry H. Andrews, M. E., Bank Cashier	Callaway, Neb.
Henry W. Brown, M. S., Instructor Metaphysics, Literary Institute, New Hampton, N. H.	
Clara L. Buck, B. S., (Mrs. Thomas W. Hine),	Phoenix, Arizona
Fannie E. Colburn, B. S., Teacher, (Mrs. Arthur L. Fernald), Omaha, Neb.	
Edward H. Farrington, M. S., Agricultural Chemist, Experiment Station, University, Champaign, Ill.	
Oliver C. Farrington, M. S., Ph. D. Assistant, Mineralogy and Biology, Yale College, New Haven, Conn.	

<i>Name and Occupation.</i>	<i>Residence.</i>
Charles H. Fogg, B. C. E., Civil Engineer . . . . .	Greensburg, Pa.
Aldana T. Ingalls, B. C. E., Manufacturer . . . . .	Portland
*Robert J. Johnson, B. C. E., Civil Engineer . . . . .	Butte, Mon.
Clara A. Libby, B. S., Millinery and Fancy Goods . . . . .	Augusta
Horace F. McIntire, B. M. E., Millwright . . . . .	Waldoboro
Charles L. Moor, B. C. E., Civil Engineer . . . . .	Hartland
*Benjamin F. Murray, B. C. E., Farmer . . . . .	Stillwater
Edwin W. Osborn, B. C. E., Chief Clerk Gen. Supt's Dept., N. P. R. R., St. Paul, Minn.	
Oscar L. Pease, B. S., Station Agent, So. Pac. R. R., Gila Bend, Arizona	
Harold M. Plaisted, M. E., (M. E., Stevens' Institute also) Patent Soliciter and Engineer, Springfield, O.	
Alice I. Ring, B. S. . . . .	Orono
Mary L. Ring, B. S., (Mrs. H. H. Andrews) . . . . .	Callaway, Neb.
*Roscoe L. Smith, B. S., Farmer . . . . .	Lewiston
George W. Sturtevant, B. C. E., Civil and Hydraulic Engineer, Chicago, Ill.	
Frank S. Wade, B. S., M. D., Physician . . . . .	New Richmond, Wis.
*Walter A. White, B. C. E., L. L. B., Lawyer . . . . .	Newport
*John B. Wilson, B. S., Medical Student . . . . .	Orono
Levi A. Wyman, B. C. E., Lawyer and Civil Engineer . . . . .	Ellsworth

CLASS OF 1882.

Charles S. Bickford, B. S., Local Editor, Business Manager, Telegraph, Brunswick	
Jacob L. Boynton, B. S. . . . .	Lynn, Mass.
Charles W. Brown, B. M. E., Draughtsman, Patent Office, Washington, D. C.	
Stephen J. Buzzell, B. C. E., Civil Engineer . . . . .	Old Town
Oscar H. Dunton, M. E., Physician . . . . .	Melrose, Mass.
Walter Flint, M. E., Professor of Mech. Engineering, State College, Orono	
George R. Fuller, B. S., Lawyer . . . . .	Tremont
Charles C. Garland, B. S., Banker and Dealer in Pine Land, Minneapolis, Minn.	
Joseph F. Gould, B. S., City Attorney . . . . .	Old Town

\*Deceased.



<i>Name and Occupation.</i>	<i>Residence.</i>
Thomas W. Hine, B. S., Lawyer and Banker . . .	Phoenix, Arizona
Will R. Howard, B. S., Instructor Vermont Academy,	Saxton's River, Vt.
Alonzo L. Hurd, B. S., Medical Student, University,	Burlington, Vt.
Alfred J. Keith, B. C. E., City Engineer and Merchant, Old Town	
Frank I. Kimball, C. E., Mining Engineer . . . . .	Greensburg, Pa.
James H. Patten, B. S., M. D., Physician . . . . .	Clifton
Frederick M. Reed, B. M. E., Draughtsman,	B. & S. M't'g Co., Providence, R. I.
Gleason C. Snow, B. S., Farmer . . . . .	North Orrington
Avery P. Starrett, B. S., Farmer . . . . .	Warren
Frank H. Todd, B. C. E., Civil Engineer N. P. R. R.,	W Duluth, Minn.
Eben C. Webster, B. S., Treasurer Webster Paper Co. . . . .	Orono
Willard A. Wight, B. C. E., Supt. Gas Works. . . . .	Trinidad, Col.
Daniel C. Woodward, B. M. E., Draughtsman. . . . .	Madison, Wis.

## CLASS OF 1883.

James H. Cain, B. S., Merchant . . . . .	Montague
Jonathan V. Cilley, B. C. E., Inspector General of Railroads,	Buenos Ayres, Arg. Rep., S. A.
Frank E. Emery, B. S., Asst. Prof. of Ag. N. C. College	and Agriculturist to Exp't Station, Raleigh, N. C.
Arthur L. Fernald, B. S., Merchant . . . . .	Omaha, Neb.
Bartholomew P. Kelleher, B. S., M. D., Physician. . . . .	Orono
Lucius H. Merrill, B. S., Analytical Chemist,	Agricultural Experiment Station, Orono
Jennie C. Michael, B. S., Teacher . . . . .	Prescott, Arizona
Charles W. Mullen, B. C. E., Civil Engineer . . . . .	Old Town
Truman M. Patten, B. C. E., Civil Engineer. . . . .	Spokane, Wash.
Harry W. Powers, B. S., Manufacturer . . . . .	Orono
Charles E. Putnam, B. C. E., Civil Engineer,	Franklin Park, Boston, Mass.
Lewis Robinson, Jr., B. M. E., M. D., Physician . . . . .	South Brewer
George A. Sutton, B. C. E., Merchant . . . . .	Abbot
Levi W. Taylor, M. S., Principal High School and Supt.	of Schools, Prescott, Arizona

CLASS of 1884.

<i>Name and Occupation.</i>	<i>Residence.</i>
George H. Allan, B. S., Lawyer.....	Portland
*Will H. Burleigh, B. C. E. ....	Vassalboro
Mary F. Conroy, B. S., Teacher .....	Brewer
Leslie W. Cutter, B. C. E., Contractor and Builder ...	Bangor
Harriet C. Fernald, M. S., Librarian, State College ...	Orono
Elmer E. Hatch, B. S., Farmer. ....	Roseland, Mon.
John E. Hill, B. C. E., Civil Engineer .....	Lander, Wyo.
Joseph G. Kelley, C. E., Civil Engineer.. ...	Bar Harbor
Edwin F. Ladd, B. S., Chemist, Experiment Station and Professor of Chemistry, State College, Fargo, N. D.	
Clarence S. Lunt, B. C. E., City Editor Commercial ...	Bangor
Fred L. Stevens, B. S., Student of Veterinary Science, New York, N. Y.	
William Webber, M. E., Draughtsman, McCormick H. M. Works, Chicago, Ill.	

CLASS OF 1885.

George W. Chamberlain, B. S., Principal Grammar School, Calais	
Asher Dole, B. C. E., Civil Engineer. ....	Superior, Wis.
Orion J. Dutton, B. S., Clerk .....	Boston, Mass.
Henry T. Fernald, M. S., Ph. D., Professor Natural History, State College, Pa.	
Elmer O. Goodridge, M. E., Mech. Eng. Normal and Ag. Institute, Hampton, Va.	
George L. Hanscom, B. S., Clergyman .....	Sheldon, Iowa
James N. Hart, C. E., Professor of Mathematics and Astronomy, State College, Orono	
Frank E. Hull, C. E., Civil Engineer B. & A. R. R. ...	Rockland
Austin H. Keyes, B. C. E., Principal High School, Stonington, Conn.	
William Morey, Jr., B. C. E., Draughtsman ...	Washington, D. C.
Joseph P. Moulton, B. S., Farmer....	Springvale
Leonard G. Paine, M. E., Mechanical Engineer, Pratt & Whitney Co., Hartford, Conn.	
Elmer E. Pennell, B. M. E., Machinist, Locomotive Works, Providence, R. I.	

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\*Deceased.

<i>Name and Occupation.</i>	<i>Residence.</i>
Louis W. Riggs, B. M. E., Instructor Science and Mathematics,	Englewood, N. J.
Fremont L. Russell, B. S., V. S., U. S. Inspector, Vanceboro and Veterinarian to The Me. Agric'l Exp. Station, Orono,	

## CLASS OF 1886.

Bert J. Allan, B. C. E., Principal Pratt Free School,	No. Middleboro, Mass.
Josiah M. Ayer, B. C. E., Ass't Engineer, B. & M. R. R.,	Somerville, Mass.
George G. Barker, B. M. E., Draughtsman,	McCormick H. M. Co., Chicago, Ill.
George F. Black, C. E., Road Master	Mountain Div., M. C. R. R., Portland
John D. Blagden, B. C. E., Observer, Weather Bureau,	Knott's Island, N. C.
Heywood S. French, C. E., Civil Engineer	Newtonville, Mass.
Edwin D. Graves, C. E., Civil Engineer,	With Berlin Iron Bridge Co., E. Berlin, Conn.
Ralph K. Jones, B. S., with Kellogg Seamless Tube Co.,	Findlay, Ohio
Elmer Lenfest, B. C. E., Civil Engineer	Snohomish, Wash.
James F. Lockwood, M. E., Draughtsman	New York, N. Y.
George F. Lull, M. S., Chemist, Penobscot Chem. Fibre Co.,	West Great Works
Willis H. Merriam, B. C. E., Lawyer	Spokane, Wash.
Elmer E. Merritt, M. E., Merchant	Salt Lake City, Utah
Arthur D. Page, B. C. E., Civil Engineer	St. Cloud, Minn.
Irving B. Ray, B. C. E., Lumberman	Harrington
Sidney S. Twombly, B. S., V. S., Prof. of Chemistry and Veterinary Science, Agricultural College, Logan, Utah	

## CLASS OF 1887.

John H. Burleigh, B. C. E., Civil Engineer, N. M. R. R.,	Vassalboro
Luis V. P. Cilley, B. C. E., Civil Engineer,	Buenos Ayres, Argentine Republic, S. A.
Bert E. Clark, B. S., Principal High School	Scarboro
Edwin V. Coffin, B. C. E., Merchant	Harrington

<i>Name and Occupation.</i>	<i>Residence.</i>
David W. Colby, B. S., Ass't in Chemistry, State College . . .	Orono
Alice A. Hicks, M. S., (Mrs. George F. Black).. . . . .	Portland
James D. Lazell, B. M. E., Engineer and Contractor,	Roanoke, Va.
Charles A. Mason, B. C. E., Civil Engineer,	Portland, Oregon.
Henry A. McNally, B. C. E., Observer, Weather Bureau,	Milwaukee, Wis.
Fenton Merrill, B. C. E., Civil Engineer, G. N. R. R.,	Davenport, Wash.
Addison R. Saunders, B. M. E., Architect . . . . .	Tacoma, Wash.
Cassius A. Sears, B. C. E., Lumber Manufacturer . . . .	Fort Kent
Charles H. Stevens, B. M. E., Manufacturer . . .	Grand Falls, N. B.
Charles F. Sturtevant, B. C. E., Civil and Hyd. Engineer,	Bushnell, Ill.
Frank E. Trask, C. E., Civil and Hyd. Engineer . .	Ontario, Cal.
Charles T. Vose, B. C. E., Ass't Engineer, M. C. R. R . .	Portland
Howard S. Webb, B. M. E., Instructor in Shop Work,	Maine State College, Orono
John S. Williams, B. S., Lawyer.....	Guilford

CLASS OF 1888.

Hiram B. Andrews, B. C. E., Draughtsman.....	Boston, Mass.
*George S. Batchelder, B. M. E., Draughtsman....	Bangor
Charles D. W. Blanchard, B. C. E., Civil Engineer.. . .	Old Town
John R. Boardman, B. S., Journalist. . .	Kennebec Journal, Augusta
Francis S. Brick, B. S., Principal High School, Berlin Falls, N. H.	
Harry Butler, B. S., Instructor, Academy.. . . . .	Hampden
Dudley E. Campbell, C. E., Civil Engineer . . . . .	Brunswick
Fred L. Eastman, B. M. E., Draughtsman... . . . .	Lynn, Mass.
Edward H. Ellwell, Jr., B. S., Journalist, Portland Transcript,	Portland
William J. Hancock, E. S., Professor Natural Science,	Antioch College, Yellow Springs, Ohio
John W. Hatch, M. S., Instructor at Normal and	Agricultural Institute, Hampton, Va.
Claude L. Howes, M. E., with Thompson-Houston	Electric Co., Lynn, Mass.

\*Deceased

<i>Name and Occupation.</i>	<i>Residence.</i>
Harry F. Lincoln, B. S., Electrician.	Millbury, Mass.
Thomas G. Lord, B. S., Farmer	Skowhegan
Ralph H. Marsh, B. S., Principal High School.	Stillwater
Seymore F. Miller, B. C. E., Ass't Engineer, P. P. & D. H. R. R., Kamilche, Wash.	
William Philbrook, B. C. E., Washburn Shop, Polytechnic Institute, Worcester, Mass.	
Seymour E. Rogers, B. M. E., Draughtsman.	Greely, Col.
George S. Seabury, B. M. E., Draughtsman	Bangor
Frank L. Small, B. M. E., Draughtsman, In charge of Indian Training Shop, A. & M. Institute, Hampton, Va.	
Frank A. Smith, B. C. E., Civil Engineer	St. Cloud, Minn.
Nathaniel E. Wilson, B. S., Chemist State Experiment Station, Reno, Nevada	

## CLASS OF 1889.

Fred P. Briggs, B. S., Assistant in Natural History, Maine State College, Orono	
Charles G. Cushman, B. M. E., Pres. and Manager Cushman Iron Co., Roanoke, Va.	
Joseph W. Edgerly, Jr., B. C. E., Civil Engineer Me. Shore Line R. R., Princeton	
Jere S. Ferguson, B. S., Medical Student, University of New York	
George G. Freeman, B. S., Law Student and Supervisor of Schools, Cherryfield	
George M. Gay, B. S., Clerk.	Boston, Mass.
Eben R. Haggitt, B. S., Business	Cambridge, Md.
Nellie L. Leavitt, B. S., Teacher	Odell, Minn.
John Reed, B. C. E., C. & M. R. R.	Gorham, N. H.
Nellie W. Reed, B. S., Teacher	Stillwater
*Fred Stevens, B. M. E., Draughtsman	Winter Harbor
Gilbert S. Vickery, B. C. E., Civil Engineer	Bangor
Mark E. White, B. C. E., Civil Engineer, B. & A. R. R., Ashland	
Mortimer F. Wilson, B. S., Merchant.	Orono

\*Deceased.

## CLASS OF 1890.

<i>Name and Residence.</i>	<i>Occupation</i>
Frank O. Andrews, B. M. E., Draughtsman.....	Chelsea, Mass.
George H. Babb, B. M. E., Instructor, Kamehameha	School, Honolulu, H. I.
John Bird, 2d, B. M. E., Supt. Cushman Iron Co.,	Roanoke, Va.
Ralph H. Blackington, B S.....	Rockland
Hugo Clark, B. C. E., Draughtsman .....	Boston, Mass.
Alphonso J. Coffin, B. S., Sec'y and Treas. Cushman	Iron Co., Roanoke, Va.
Walter E. Croxford, B. M. E., Draughtsman..	Bangor
Fred T. Dow, B. M. E., Instructor in Forge Work	and Mechanical Drawing, Plymouth, Montserrat, W. I.
Albert W. Drew, B. M. E., Draughtsman..	Bath
Harris D. Dunton, B. M. E., Draughtsman,	American Manuf. Co., St. Paul, Minn.
Horace P. Farrington, B. M. E., Draughtsman,	Thomson-Houston Electric Company, Boston, Mass.
George P. Gould, B. S , Bookkeeper City Hospital..	Waterville
Nathan C. Grover, B. C. E., Ass't in Civil Engineering,	Maine State College, Orono
Allen C. Hardison, B. C. E., Surveyor.....	Santa Paula, Cal.
Chandler C. Harvey, B. C. E., Ass't Engineer, Helena,	Montana
Samuel H. T. Hayes, B. S , Farmer .....	Oxford
Everett F. Heath, B. M. E., Principal, Academy .....	Monmouth
Edward H. Kelley, B. S., Journalist .....	Belfast
George E. Keyes, B. M. E., Principal High School, Westerly,	R I.
Hannab E. Leavitt, B. S., (Mrs. Walter Flint) .....	Orono
Elmer L. Morey, B. C. E., Draughtsman, American	Bridge Iron Co., Roanoke, Va.
Edmund N. Morrill, B. S., Chemist and Assayer, Canon City,	Col.
John W. Owen, Jr., B. C. E., Civil Engineer, G. W. R. R.,	Helena, Mon.
John V. Pierce, B. M. E., with Thomson-Houston	Electric Co., Lynn, Mass.
William Bridgham Pierce, B. M. E., Law Student .....	Bangor
William Barron Pierce, B. M. E., Draughtsman,	McCormick H. M. Co., Chicago, Ill.
George M. Pillsbury, B. S., Supt. Pulp Mill. .	Cumberland, Md.

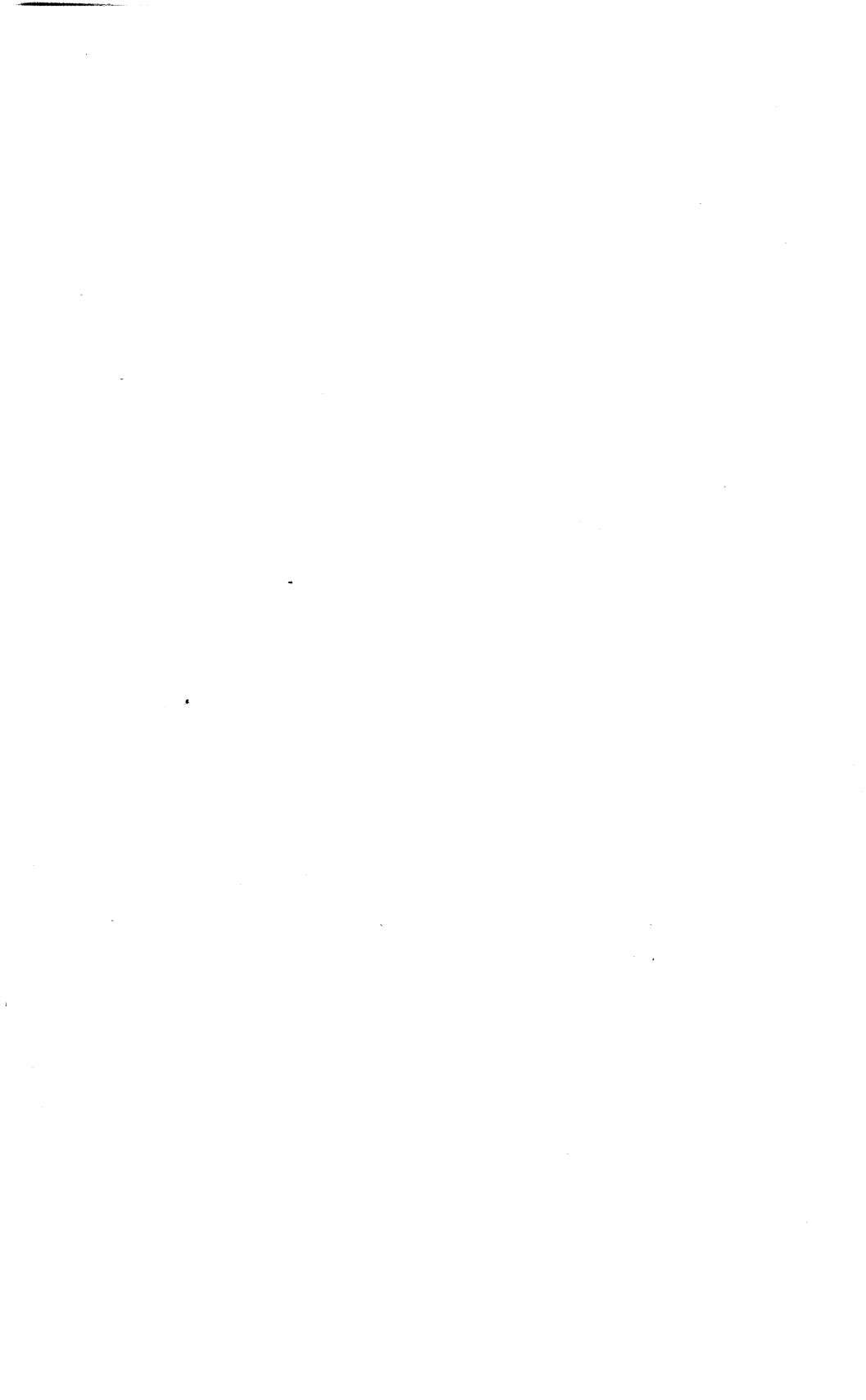
<i>Name and Occupation.</i>	<i>Residence.</i>
Fred G. Quincy, B. M. E., Scaler . . . . .	Masardis
Joseph R Rackliffe, B. C. E., Civil Engineer	C. B. & Q. R. R., St. Joseph, Mo.
Paul F. Reed, B. C. E. . . . .	Boothbay
Frank W. Sawyer, B. S., Medical Student. . . . .	Old Town
Clarence B. Swan, B. M. E., Merchant . . . . .	Old Town
Chester J. Wallace, B. C. E., Civil Engineer. . . . .	Boston, Mass.
Winfield S. Webb, B. C. E., Civil Engineer, P. R. R., Gallitzen, Pa.	
Ralph H. Wight, B. C. E., Civil Engineer.	K. & G. B. & W. R. R., Green Bay, Wis.
Charles S. Williams, B. S., Post Graduate,	Harvard University, Cambridge, Mass.

## CLASS OF 1891.

Ralph J. Arey, B. C. E., C. E., City Sewerage System,	Newton, <b>Mass.</b>
William M. Bailey, B. C. E., C. E. City Sewerage System,	Newton, <b>Mass.</b>
Edmund Clark, B. S., Post-Graduate School of Mines,	Columbia College, New York, N. Y.
Charles Clayton, B. S., Clerk Post Office . . . . .	Bangor
Wallace R. Farrington, B. S., Telegraph Editor,	Bangor Daily News, Bangor
William R. Farrington, B. C. E., Civil Engineer . . . . .	Rumford Falls
John H. Flanagan, B. M. E., Harris, Corliss Eng. Co.,	Providence, R. I.
Joseph C. Graves, B. M. E., Berlin Iron Bridge Company,	Berlin, Conn.
Bert A. Hall, B. C. E., Civil Engineer,	At. & Pac. R. R., Prescott, Arizona
Cyrus Hamlin, B. S., Student, Long Island Medical School,	Brooklyn, N. Y.
Prescott Keyes, Jr., B. C. E., Principal High School . . . . .	Bar Harbor
Charles H. Kilbourne, B. S. Salesman . . . . .	Bangor
Robert W. Lord, B. M. E., Machinist, Iron Works . . . . .	Bath
Hugo G. Menges, B. M. E., Mechanical Engineer. . . . .	Bangor
Fred C. Moulton, B. S., Gypsy Moth Commission . . . . .	Malden, Mass.
William N. Patten, B. C. E. . . . .	Cherryfield

<i>Name and Occupation.</i>	<i>Residence.</i>
Henry V. Starrett, B. S., Instructor and Farm Supt., Normal & Ag'l Institute, Hampton, Va.	
John W. Steward, B. M. E . . . . .	Skowhegan
Charles N. Taylor, B. C. E., C. E., City Sewerage System, Newton, Mass.	
George E. Thompson, B. C. E., Bangor & Aroostook R. R., Orono	
William A. Valentine, B. M. E., Teacher . . . . .	Bethel





## NON-GRADUATES.

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Number, 330 ; of whom 302 are now living.

Average period of attendance, one and a half years.

The list of names is omitted the present year.

Information, including the residence and occupation of all the non-graduates, is solicited for a revised list, for future catalogues.

Such information should be furnished, either to the President of the College, or to the Corresponding Secretary of the Alumni Association.

## CALENDAR.

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- 1892—Feb. 2, Tuesday, Second Term commences.  
June 23, 24, Thursday and Friday, Examinations.  
“ 25, Saturday, Prize Declamations by Sophomores.  
“ 26, Sunday, Baccalaureate Address.  
“ 27, Monday, Prize Essays by Juniors.  
“ 29, Wednesday, Commencement.  
July 1, Friday, Examination of Candidates for Admission.  
Vacation of nine weeks.  
Aug. 30, Tuesday, Examination of Candidates for Admission.  
First Term commences.  
Dec. 22, 23, Thursday and Friday, Examinations.  
Vacation of seven weeks.  
1893—Feb. 7, Tuesday, Second Term commences.

