1896

General Catalogue 1896

Utah State University

STATE

Agricultural College

OF UTAH.

1896-97.

MAIN COLLEGE BUILDING.

COMPLETE EXCEPTING THE CENTRAL FRONT.

ANNUAL CATALOGUE

—OF THE—

AGRICULTURAL COLLEGE

OF UTAH

FOR THE YEAR 1896-7.

LOGAN, UTAH.

PRESS OF SMITH, CUMMINGS & CO., LOGAN.

CALENDAR-1896

JANUARY.

S	M	T	W	T	F	S
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5	6	7	8	9	10	11
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FEBRUARY.

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MARCH.

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APRIL.

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MAY.

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JUNE.

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AUGUST.

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SEPTEMBER.

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OCTOBER.

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NOVEMBER.

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DECEMBER.

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1897

JANUARY.

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FEBRUARY.

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MARCH.

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APRIL.

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MAY.

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JUNE.

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COLLEGE CALENDAR, 1896-7.

FIRST TERM begins Tuesday September 15, and ends Friday December 18, 1896.

SECOND TERM begins Tuesday January 5, and ends Friday April 2, 1897.

THIRD TERM begins Wednesday April 6, and ends Wednesday June 16, 1897.

Commencement Exercises occur from Sunday June 13, to Wednesday June 16.

HOLIDAYS.

Thanksgiving Day.
Christmas vacation, Dec. 20, to Jan. 4.
Washington's Birthday, Feb. 22.
Arbor Day, April 15.
Decoration Day, May 30.
Summer vacation begins June 17.

BOARD OF TRUSTEES.

HON. WILLIAM S. MCCORNICK, President . . Salt Lake City.
HON. SARA GODWIN GOODWIN . . . . . Logan.
HON. EMILY S. RICHARDS . . . . . Salt Lake City.
HON. MARRINER W. MERRILL . . . . . Logan.
HON. DAVID C. ADAMS . . . . . Salt Lake City.
HON. JOHN C. GRAHAM . . . . . Provo.
HON. LORENZO HANSEN . . . . . Wellsville.

OFFICERS OF THE BOARD.

W. S. MCCORNICK, President . . . . . Salt Lake City.
JOSEPH E. HYDE, Secretary . . . . . Logan.
RIPLEY S. LYON, Treasurer . . . . . Logan.

EXPERIMENT STATION STAFF.

LUTHER FOSTER . . . . . Director
F. W. BREWER . . . . . Biologist
S. FORTIER . . . . . Hydraulic Engineer
F. B. LINFIELD . . . . . Dairyman
JOHN A. WIDTSOE . . . . . Chemist
PAUL FISCHER . . . . . Consulting Veterinarian
. . . . . Horticulturist
LOUIS A. MERRILL . . . . . Assistant Agriculturist
JAMES D. DRYDEN . . . . . Clerk and Stenographer
LORIN A. MERRILL . . . . . Assistant in Dairy Department
WALTER W. MCLAUGHLIN . . . . . Assistant Chemist
JOHN STEWART . . . . . Assistant Chemist
RIPLEY S. LYON . . . . . Treasurer
JOSEPH E. HYDE . . . . . Secretary

FACULTY.

Arranged in order of seniority of appointment.

JOSEPH M. TANNER, PRESIDENT.

Professor of Political Science.

JOHN T. CAINE JR., B. S.,

Principal of Preparatory Department, and Professor of History.

JOSEPH E. SHEPARD, B. S.,

Principal of Commercial Department, and Professor of Commercial Economics and Bookkeeping.

JAMES DRYDEN,

Instructor in Type-writing and Stenography.

ELIAS J. MAC EWAN, M. A.,

Professor of English and German.

F. W. BREWER, M. D.,

Professor of Biology and Sanitary Science.

MISS CLARE KENYON,

Instructor in Elocution and Physical Culture.

SAMUEL FORTIER, Ma. E.,

Mem. Can. Soc. C. E., M. Am. Soc. I. E.,

Professor of Civil Engineering.

F. B. LINFIELD, B. S. A.,
Professor of Dairying and Animal Husbandry.

J. WALTER MAYO,
Instructor in Mechanic Arts.

WILLARD S. LANGTON, B. S.,
Assistant Professor of Mathematics.

JOHN A. WIDTSOE, B. S.,
Professor of Chemistry and Mineralogy.

MRS. DALINDA COTEY, B. S.,
Professor of Domestic Arts.

MISS SARAH E. BOWEN,
Instructor in Sewing, Dressmaking, and Millinery.

JOSEPH E. HYDE,
Instructor in Penmanship.

PAUL FISCHER, B. AGR. M. V. D.,
Professor of Agriculture, Botany, Entomology, and Veterinary Science.

JOSEPH JENSEN,
Professor of Physics and Mechanical Engineering.

LEWIS CANNON, B. S..
Professor of Mathematics and Drawing.

MRS. SARA GODWIN GOODWIN,
Librarian and Instructor in Music.

LUTHER FOSTER, B. S., M. S. A.,
Director of Experiment Station.

LEWIS A, MERRILL, B. S..
Assistant Agriculturist.

EDWARD W. ROBINSON,
Instructor in German.

Professor of Military Science.

AUGUST J. HANSEN,
Assistant in Shopwork.

LORIN A. MERRILL, B. S.,
Assistant in Dairying Department.

WALTER W. McLAUGHLIN, B. S.,
Assistant in Chemical Laboratory of Experiment Station.

JOHN STEWART,
Assistant in Chemical Laboratory of Experiment Station.

ESTABLISHMENT OF THE COLLEGE.

An Act of Congress, approved July 2, 1862, provided that public lands should be granted to the several states, to the amount of "thirty thousand acres for each senator and representative in Congress," for the establishment and maintainance of an agricultural college in each state. By the terms of the recent act providing for the admission of Utah as a state, the amount of public lands granted to the Agricultural College of Utah was increased to 200,000 acres.

The national law provides that from the sale of this land there shall be established a perpetual fund "the interest of which shall be inviolably appropriated, by each state which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." The act forbade the use of any portion of the aforesaid fund, or of the interest thereon, for the purchase, erection, or maintenance of any building or buildings.

This land became available upon the admission of the Territory to statehood.

The legislature of Utah in 1888, accepted the provisions of the national law by the passage of an act which founded the College, defined its policy, prescribed its work, and indicated its sphere.

"SEC. 12—The course of instruction shall embrace the English language and literature, mathematics, civil engineering, agricultural chemistry, animal and vegetable anatomy and physiology, the veterinary art, entomology, geology, and such other natural sciences as may be prescribed, technology, political, rural, and household economy, horticulture, moral philosophy, history, bookkeeping, and especially the application of science and the mechanical arts to practical agriculture in the field."

"SEC. 10.—In the appointment of professors, instructors, and other officers and assistants of said college, and in prescribing the studies and exercises thereof, no partiality or preference shall be shown by the trustees to one sect or religious denomination over another; nor shall anything sectarian be taught therein; and persons engaged in the conducting, governing, managing or controlling said College and its studies and exercises in all its parts, shall faithfully and impartially carry out the provisions of this act for the common good, irrespective of sects or parties, political or religious."

It is clear that the Agricultural College was founded in the interest of the industrial classes in the several pursuits and professions of life, to give not alone a technical education, but, in the language of the law, a "liberal and practical education." The legislative founders of this institution sought to place within reach of the producing classes, an education that the older institutions had not, as a rule, made provisions for.

The policy of the College is in consonance with the letter and the spirit of the laws upon which it was founded. Its courses of instruction represent the great vocations of the people of Utah: agriculture, the mechanic arts, commerce, and home work.

"The act of 1862," says Senator Morrill, "proposed a broad education by colleges, not limited to a superficial and dwarfed training, such as might be had in an industrial school, nor a mere manual training such as might be supplied by a foreman of a workshop, or by a foreman of an experimental farm. If any would have only a school with equal scraps of labor and of instruction, or something other than a college, they would not obey the national law."

Under an act of Congress, approved March 2, 1887, the College receives $15,000 annually for the maintenance of its experimental work in agriculture. This is in charge of the department known as the Agricultural Experiment Station.

Under an act of Congress approved March 30, 1890, the College received for its more complete endowment and maintenance "the sum of fifteen thousand dollars for the year ending June thirteenth, eighteen hundred and ninety." The act provides that this amount shall be increased by one thousand dollars each year until the annual appropriation reaches twenty-five thousand dollars. The amount received under this law for the present year will be $22,000.

The legislature of 1888 gave $25,000 for buildings. The county of Cache and the town of Logan gave one hundred acres of land on which to locate the College. The legislature of 1890 appropriated $48,000 for apparatus, for the employment of teachers, and for the construction of a house, barn, two laborer's cottages, and an experiment station building. The legislature of 1892 gave $108,000 for an addition to the College building, two houses, apparatus, and salaries of teachers. The legislature of 1894 appropriated $15,000 for the purchase of apparatus, for a greenhouse, a veterinary laboratory, and the employment of teachers. The legislature of 1896 appropriated $12,000 for the construction of workshops, and general expenses for one year.

The State auditor reports the value of the College property now in possession at the conservative figure of $225,-721.

The Constitution recently framed by the Territorial Convention, for the new State of Utah, provides:

"Sec. 4.—The location and establishment by existing laws of the University of Utah and the Agricultural College are hereby confirmed, and all the rights, immunities, franchises, and endowments heretofore granted or conferred, are hereby perpetuated unto said University and College respectively."

LOCATION OF THE COLLEGE.

The College is located on a broad hill overlooking the town, one mile east of Main Street, Logan, commanding a view of the entire valley and of its surrounding mountain ranges. The beauty of the location is unsurpassed, and perhaps unequaled by that of any other college in the country. A few hundred yards to the south is the Logan River, with its clear water and luxuriant grasses and shrubs. A mile to the east is a magnificent mountain range and a picturesque canyon. In other directions the towns and farms covering the green surface of Cache Valley, constitute a delightful and impressive panorama through the clear atmosphere. The city is noted for its freedom from vice; is quiet, orderly, clean, and generally attractive, with neat homes, fine public buildings, and electric lights and water system; the citizens are thrifty and progressive. The city has a population of about 6,000, and is the capital and commercial centre of an agricultural county with more than three times that population, known as Cache Valley. The valley is a fertile, slightly uneven plain, 4,500 feet above sea level, about sixty by twelve miles in dimensions, almost entirely under cultivation, completely surrounded by the Wasatch Mountains, and one of the most beautiful and healthful valleys in the western region.

EQUIPMENT OF THE COLLEGE.

THE MAIN BUILDING is one of the finest in the West, being a large handsome brick structure, about 360 feet long and nearly 200 feet deep in the central part. It is complete, as shown in the frontispiece, excepting the central front.

It contains a large auditorium, with seating capacity for 1500 people, which is used for college entertainments, and for assemblies of the students and their friends. A smaller auditorium, capable of seating 400, is used daily as a chapel,

and for the weekly meetings of the College literary society. The class rooms are sixty in number, all large, well lighted, well heated, and well ventilated.

The basement contains the shops for wood-work and iron-work, and the foundry. These departments are well supplied with the usual wood and iron working machines, and with the necessary appliances for metal casting. The machine shops are equipped with engine, lathes, planers, and other machines of recent construction. A new building for shop work is in course of construction, and will, probably, be completed and in use during the ensuing year.

The dairy rooms, containing the best apparatus for the manufacture of butter and cheese on scientific principles, are situated in the basement.

The laundry, kitchen and dining rooms, which are efficiently fitted with the requisite apparatus in each division, are also in the basement.

The sewing and millinery rooms are on the first floor.

The biological, botanical, entomological, chemical and physical laboratories are situated on the second floor, and are very efficiently equipped with the most modern apparatus for experiment and research in the respective sciences.

The commercial department, which is well equipped with the appliances for banking, commercial and general business, is also situated on the second floor.

On the third floor are the gymnasium and the museum, large rooms as fully equipped as the means at the disposal of the Board of Trustees have hitherto rendered possible. The gymnasium is also used as a drill hall for young women and for social gatherings of the faculty and students. The museum has a large unused capacity, therefore donations in any of the arts and manufactures or in geological, ethnological, mineralogical, zoological and other divisions of science, from the citizens of Utah or from other friends of education will be thankfully accepted.

The library, of which full details will be found on a following page, and the music rooms, which are supplied with

superior instruments, are all situated in the principal building.

The main building is heated by steam and lighted by electricity in every part. The rooms are light and pleasant and the halls spacious, extending on each floor the entire length of the building.

THE EXPERIMENT STATION building is a large brick structure, containing the laboratories of the Agriculturist, Chemist, and Horticulturist; the office of the Director of the Station, and the library of the Professor of English. Advanced students participate in the work of the various laboratories, and a series of experimental researches is carried on in each division by the professor in charge.

A MODEL BARN AND STOCKYARD are connected with the College. The barn is a wooden building about sixty feet square and contains a silo, a root cellar, an engine room and separate quarters for horses, cattle, sheep and swine; also model storage divisions for hay, grain and farming and horticultural implements.

A DORMITORY is connected with the College and contains accommodation for about seventy-five students. Each room is about 12 x 14 feet, exclusive of a good closet and is furnished with chairs, tables, a wash-stand, a full set of chamber ware, a looking glass, and either a bedstead or two cots; there are also registers for efficient ventilation.

In addition to the rooms for the students, there are rooms for matron and for cooks and domestics, a model kitchen, a large dining hall, a pantry supplied with modern conveniences, a laundry and bath rooms. A large reception room 19x27 feet, is used for students receptions, under the auspices of the President's wife, the ladies of the faculty and the wives of the members of the faculty.

RESIDENCES for the College President, the Director of the Experiment Station, and the Farm Superintendent are situated on the Campus. Cottages for farm laborers have also been provided.

A FORCING HOUSE AND A VETERINARY LABORATORY, both

well fitted for their purposes, are situated on the College grounds.

THE FARM of about one hundred acres is well stocked with the best breeds of cattle, sheep and swine, and is fully provided with improved implements and farm machinery.

THE GARDENS AND ORCHARDS, which are extensive and well stocked, are devoted to experimental horticulture and pomology.

Three and a half acres of ground, close to the College building are appropriated to the use of students, for athletic sports.

THE FACULTY consists of about twenty-five members, thoroughly educated gentlemen and ladies, many of them of long and successful experience in practical and industrial, as well as general education.

OBJECTS.

The College is in several ways accomplishing the objects for which it has been endowed:

I. It gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

II. It teaches the sciences applied to the various industries of farm, shop, and home. Chemistry, botany, entomology, zoology, and mechanics are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants and animals themselves illustrates and fixes the daily lessons. At the same time lessons in agriculture, horticulture, engineering and household economy show the application of science; and all are enforced by actual experiment.

III. It trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments

of thoughtful brains. The drill of the shops, gardens, farm and household departments, is made a part of the general education for usefulness, and insures a means of living to all who make good use of it. At the same time it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

IV. It strives to increase experimental knowledge of agriculture and horticulture. The provision for extensive and accurate research, made by establishing the Experiment Station as a distinct department of the College, offers assurance of more definite results than can be obtained by ordinary methods.

REQUIREMENTS FOR ADMISSION.

1. Graduates of the Eighth grade of the district schools are permitted to enter the sub-freshman year without examination.

2. To enter the freshman year the student must be at least fifteen years of age, and must pass a satisfactory examination in the following subjects, using the texts named or their equivalents:

1. Reading, spelling, and penmanship.
2. Geography—Appleton's *Higher Geography*.
3. United States History—Barnes's *United States History*.
4. Grammar—Maxwell's *Advanced Lessons*.
5. Arithmetic—Harper's *Second Book*.

Students may be admitted without examination from an accredited high-school, academy, or other institution, if they present certificates of the completion of the subjects named above; they are also admitted upon completion of the sub-freshman studies in this College.

DIRECTIONS TO STUDENTS.

The regular examinations for new students are held on the first two days of each term. Irregular students are ex-

amined when they enter. The studies to be taken are assigned by the examiners and approved by the president.

The entrance fee ($5) is then paid at the secretary's office; and the class card naming the studies to be pursued is countersigned by the president and the secretary. The card admits the student to his classes, and when signed by the several professors entitles him to all the privileges of membership. The student returns this card to the secretary. The course of study, as thus marked out, cannot be varied by the student except upon petition to the faculty.

When students enter for the second and third terms, the cards are secured from the secretary of the faculty, the studies assigned by the president, the cards signed by the professors and returned to the secretary, as before

COURSES OF STUDY.

The first year is the same for all the four year courses, and there is but a slight variation in the second year.

The studies and training of these years have been laid out with care; and students are not permitted to vary from the course shown in the outline, except as herein provided.

1.—Students in either course in Domestic Arts take sewing and dressmaking in the freshman year, in the place of shop work in wood and iron, as indicated by the footnote to schedule. In the sophomore year, second term, they take lectures on cooking, and laboratory practice in cooking in the place of trigonometry and electricity and magnetism; and in the third term, lectures on the science of nutrition, and laboratory practice in cooking instead of surveying and elementary mechanics.

2.—In the several short courses, the studies of the first two years are varied far enough to meet the requirements of this class of students.

The studies of the first two years are planned to meet the requirements of the most numerous class of students, the majority of whom attend for two years or less after com-

pleting the studies of the district schools. These two years, as now planned in the schedule, provide as broad culture in a general way, and as thorough preparation for the special courses which follow, as the College is at present able to offer. It cannot assume, therefore, to vary the courses further than is indicated above; and students are expected to pursue the studies as here laid down or as many of them as they are able to pursue.

AGRICULTURAL COURSE.

The aim of this course is the general education and scientific training of the future agriculturists of Utah. The training is as thorough as is possible in the short time allotted. The principal exercises directly related to the successful pursuit of agriculture are taught, but no pretension is made to train specialists in any one particular branch of science. The time for this is necessarily too short.

Under *agriculture* in the junior and senior years are included a great variety of subjects, the intelligent pursuit of which requires as a foundation a certain knowledge of chemistry, physiology, zoology, botany, and other sciences. The freshman and sophomore years are intended to give this preparatory training.

The Short Agricultural Course, extending over a period of two years, is offered to those students whose time or means will not permit them to devote four years to a training for their future vocation. It is made as practical as possible in order to meet the demands of the most numerous class.

The College also offers during the winter, a special course of lectures on practical agricultural topics, intended to reach those farmers who can leave their farms for a few short winter months only, but who appreciate the advantages of a knowledge of the fundamental principles underlying their business. The lectures in this course are of a popular character and have met with much success.

The figures in the following course schedules denote the number of hours devoted to each subject during the week.

STUDIES IN AGRICULTURAL COURSE.

FRESHMAN YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Grammar 5	Rhetoric 5	Literature 5
Algebra 5	Algebra 3	Algebra 2
Grecian History 2	Geometry 2	Geometry 3
Physics 3	Roman History 2	English History 3
Drawing 3	Physics 3	Physics 2
Elocution 2	Drawing 3	Drawing 3
	Elocution 2	Elocution 2
	Afternoon Work.	
Shopwork 10	Shopwork 10	Shopwork 10

SOPHOMORE YEAR.

Chemistry 3	Chemistry 3	Chemistry 3
Rhetoric 2	Rhetoric 2	Rhetoric 2
Solid Geometry and Higher Algebra 5	Trigonometry 5	Botany 5
Civil Government and Constitutional Law 5	Anatomy and Physiology 5	Anatomy and Physiology 5
	Afternoon Work.	
Chemistry 6	Chemistry 6	Chemistry 6
	Anatomy and Physiology 2	Anatomy and Physiology 2

JUNIOR YEAR.

Agricultural Chemistry 3	Agricultural Chemistry 3	Economic Botany 3
Literature 5	Horticulture 5	Horticulture 5
Agriculture 3	Agriculture 3	Agriculture 3
German 3	German 3	German 3
Biology 2	Zoology 2	Zoology 2
	Afternoon Work.	
Agricultural Chemistry 4	Agriculture 2	Agriculture 4
Bacteriology 6	Mineralogy 6	Zoology 6
	Zoology 2	

SENIOR YEAR.

Dairying and Stock Breeding 5	Agriculture 5	Agriculture 3
Veterinary Science 5	Veterinary Science 5	Veterinary Science 5
German 3	German 3	German 3
Entomology 2	Entomology 2	or Literature 5
		Geology 5
Cheesemaking—Mondays.		
	Afternoon Work.	
Butter Making 2	Horticulture 2	Agriculture 2
Physiological Botany ... 4	Veterinary Anatomy 4	Entomology 4 or Botany 4

SHORT AGRICULTURAL COURSE.

FIRST YEAR.

FIRST TERM.		SECOND TERM.		THIRD TERM	
Agricultural Chemistry	.3	Agricultural Chemistry	.3	Agricultural Chemistry	3
Agriculture	.3	Agriculture	.3	Agriculture	.3
English Grammar ..	5	Rhetoric	.5	Literature	.5
Physics	.3	Physics	2	Botany	.5
		Afternoon Work.			
Chemistry	.6	Chemistry	6	Chemistry	6
Shopwork ..	.4	Agriculture	.4	Agriculture	4

SECOND YEAR.

Dairying & Stock Br'dg	5	Agriculture	5	Agriculture	.3
Veterinary Science	5	Veterinary Science	.5	Veterinary Science	.5
Physiology	.5	Horticulture	5	Horticulture	5
Cheesemaking, Mondays		Entomology	2	Economic Botany	.3
		Afternoon Work.			
Buttermaking, etc	.2	Horticulture	2	Agriculture	2
Shopwork	.6	Veterinary Science	.4	Shopwork.	6

MECHANICAL ENGINEERING COURSE.

The aim of the Mechanical Engineering Course is to afford the student such training as will qualify him to deal intelligently with engineering problems in general, and prepare him for a professional career While the distinctive purpose of the course is to give instruction in the designing and construction of machinery, considerable instruction is given in municipal, irrigation, and general engineering to form a basis for practice in these special branches.

The instruction in all branches aims to blend the theoretical with the practical, so that the student may become familiar not only with the purely scientific phase of the work, but with its application to modern practice. The student is brought, as early as possible, into contact with practical problems, the graphical as well as the analytical method being used throughout in their solution. Besides the practical tendency of the course, it has a high disciplinary value, and is especially adapted to develop originality of thought and action.

The more strictly professional work may be classified as

mathematics, physics, applied mechanics, drawing, shop-work. Sufficient work in English, history, and other general subjects is given throughout the course, to meet all ordinary demands.

STUDIES IN MECHANICAL ENGINEERING COURSE.

FRESHMAN YEAR.

FIRST TERM.		SECOND TERM		THIRD TERM.	
English Grammar	5	Rhetoric	.5	Literature	.5
Algebra.	5	Algebra ..	.3	Plane Geometry	.3
Physics	3	Plane Geometry	.2	Algebra.	2
Grecian History	.2	Physics	3	Physics .,	2
Elocution	2	Roman History	.2	English History	3
Drawing	.3	Elocution	2	Elocution ..	.2
		Drawing	.3	Drawing	3
		Afternoon Work.			
Shop-work	.10	Shop-work	.10	Shop-work	10

SOPHOMORE YEAR.

Chemistry	3	Chemistry	.3	Chemistry	.3
Rhetoric	2	Rhetoric	2	Rhetoric	2
Solid Geometry and Higher Algebra	.5	Trigonometry	.5	Analytical Geometry	.5
Civil Government and Constitutional Law..	.5	Heat and Electricity	.5	Elementary Mechanics.	.3
				Surveying	.2
		Afternoon Work.			
Chemistry	6	Chemistry	.6	Chemistry	6
Shop-work.	.4	Physics	4	Field Surveying	.4

JUNIOR YEAR.

Hydraulics	2	Hydraulics	.3	Materials of Engineer'g	5
Literature	5	Calculus	5	Calculus .	3
Calculus	.3	Descriptive Geometry	.2	Metallurgy, Iron & Steel	2
Descriptive Geometry ...	.2	Elements of Mechanism	2	Elements of Mechanism	3
Mechanical Drawing	5	Mechanical Drawing	5	Mechanical Drawing	5
		Afternoon Work.			
Machine Shops.	10	Pattern Making	.10	Machine Shops	.10

SENIOR YEAR.

Applied Mechanics	.5	Applied Mechanics.	.5	Applied Mechanics	5
Steam Engineering	.3	Steam Engineering	.3	Steam Engineering	.3
Municipal Engineering	5	Irrigation Engineering	.5	Applied Electricity	.5
Dynamics of Machines	3	Power, Measurement, and Transmission ..	.5	English Literature	5
		Afternoon Work.			
Machine Design	10	Machine Design. ..	10	Thesis ..	10

CIVIL ENGINEERING COURSE.

The instruction in this course extends over a period of four years and embraces nearly all the subjects that properly belong to a civil engineer's education. Its aim is not only to afford a training of a practical as well as theoretical nature to such students as are preparing to enter the profession of civil engineering, but to prepare young men for successful careers in manufacturing, contracting, and mining pursuits.

Every high structure requires a broad base; and he who wishes to attain a high position in any branch of engineering must first lay deep and broad the foundation in language, literature, pure mathematics, and general science. As soon as the entrance examination to the freshman year can be raised, a modern language will be added to this course; but for the present some knowledge of the English language and its literature, will have to satisfy the literary requirements.

Greater prominence has been given to that branch of engineering which relates to the storage, conveyance and use of water, since the material prosperity of the greater part of Western America is, to a great extent, dependent upon the available water supply and the use which it subserves. The design and construction of irrigation works, the need of competent managers and superintendents to operate them, and the supervision and control of the public waters, require men trained in both the theory and practice of hydraulic engineering. Already the farms of Utah, chiefly through irrigation, yield a revenue, exclusive of stock raising and the dairy, of over $6,000,000 per annum.

When so much can be done by the badly constructed irrigation works of the pioneers, it may reasonably be expected that much greater returns can be obtained by a more scientific management of the water supply. By increased storage and diminished waste, by more accurate measuring apparatus and more economical methods of application, it

may be possible ere long to double the value of the profits from irrigation farming.

Surveying extends over a period of three years; and the student who completes this course, is supposed to be fairly proficient, not only in the theoretical part of the work, but in the use of instruments and in making surveys of farm lands, city lots, canals and railroads. The object is to qualify young men for the positions of county surveyor, assistant city engineer, and level man and transit man on engineering parties.

The engineering problems connected with municipal corporations, are increasing so rapidly that it was deemed wise to introduce a course in municipal engineering.

Through the exertions of civic reformers, trained specialists are securing permanent and remunerative positions in connection with city administration; and there is reason to hope that in the course of a few years the street supervisors, building and sanitary inspectors, water, sewer and gas superintendents, and members of the boards of public works in American cities will, be appointed solely on the basis of efficiency in their respective departments.

It has been thought that the best way to secure well qualified city officers is to begin to teach some of the principles and to familiarize students with the practice involved in such subjects as rapid transit, pure domestic water supply, sewerage and sanitation, and gas and electric lighting.

STUDIES IN CIVIL ENGINEERING COURSE.

FRESHMAN YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
English Grammar.....5	Rhetoric 5	Literature 5
Algebra 5	Algebra 3	Plane Geometry.....3
Physics 3	Plane Geometry.....2	Algebra 2
Grecian History 2	Physics.....3	Physics 3
Elocution.....2	Roman History.....2	English History.....3
Drawing 3	Elocution 2	Elocution.....2
	Drawing.....3	Drawing.....3
	AFTERNOON WORK.	
Shopwork 10	Shopwork 10	Shopwork 10

SOPHOMORE YEAR.

FIRST TERM.		SECOND TERM.		THIRD TERM.	
Chemistry	.3	Chemistry	.3	Chemistry	3
Rhetoric	.2	Rhetoric	2	Rhetoric	2
Solid Geometry and Higher Algebra,	.5	Trigonometry	.5	Analytical Geometry	5
		Heat and Electricity	.5	Elementary Mechanics	3
Civil Governm't and Constitutional Law	.5			Surveying	2
		AFTERNOON WORK.			
Chemistry	6	Chemistry	6	Chemistry	6
Shopwork	.4	Physics.	4	Field Surveying	4

JUNIOR YEAR.

Hydraulics	2	Hydraulics	3	Materials of Engineer'g	5
Literature	.5	Logic	3	Roads and Pavements	.3
Calculus	.3	Calculus	5	Calculus	3
Surveying	3	Descriptive Geometry	.2	Metallurgy	2
Descriptive Geometry	2	Elements of Mechanism	2	Elements of Mechanism	3
Mechanical Drawing	.3				
		AFTERNOON WORK.			
Field Practice in Engineering	.8	Drawing and Designing	6	Hydrographic Surveying and Designing	.6

SENIOR YEAR.

Higher Surveying	.5	Power, Measurement, and Transmission	5	Sanitation	.3
Applied Mechanics.	.5	Applied Mechanics	.5	Applied Mechanics	.3
Municipal Engineer'g	.5	Irrigation Engineering	5	Literature	5
Steam Engineering.	3	Railroad Structures.	3	Applied Electricity	5
		AFTERNOON WORK.			
Eperimental Work, Engineering Designs.	.8	Mineralogy and Assaying	.6	Preparation of Thesis.	

DOMESTIC ARTS COURSE.

The course for young women is in general the same as for young men in the four years course in agriculture, except in the hours devoted to the shop, the farm, or to horticultural work. In place of these there are special studies adapted to women's work.

The value and necessity of special training in household economy are too well known to require explanation.

It will be seen that special attention is given to those branches of study in which young women require proficiency, and to those studies which tend to adorn life in the sphere in which they move.

If the place given to horticulture, floriculture, and economic botany, should require explanation, it may be sufficient to say that this line of work has a fascination for all classes, and everywhere claims the admiration and almost the affection of every person of true refinement. Household plants and the farm and village garden are always objects of interest and of importance to women, and often the source of physical health, inducing, as they do, exercise in the open air This does not necessitate the added drudgery of physical work in the garden any further than pleasure may dictate. A special class is taught in floriculture, especially as adapted to window gardening, in the preparation of soil, and in the growth of vegetables and small fruits. Exercises in the application of the knowledge acquired in the lecture room are a regular feature of the work.

Upon completion of the freshman and the sophomore year of the regular Domestic Arts Course, the student is entitled to a certificate of graduation in the short course.

STUDIES IN DOMESTIC ARTS COURSE.

FRESHMAN YEAR.

FIRST TERM.		SECOND TERM.		THIRD TERM.	
Grammar	5	Rhetoric	.5	Literature	.5
Algebra.	.5	Algebra.	.3	Algebra	2
Grecian History	2	Geometry	.2	Geometry	.3
Physics	.3	Roman History	.2	English History	3
Elocution	.2	Physics	3	Physics	.2
Drawing	.3	Elocution	.2	Elocution	.2
		Drawing	.3	Drawing	.3
		AFTERNOON WORK.			
Laundrying and Sewing	5	Sewing	.5	Dressmaking	.5
Physical Culture (Elective)	.3	Physical Culture (Elective)	.3	Physical Culture (Elective)	.3
		SOPHOMORE YEAR.			
Chemistry	.3	Chemistry	3	Chemistry	.3
Rhetoric	.2	Rhetoric	2	Rhetoric	.2
Solid Geometry and Higher Algebra	.5	Cooking (Lectures)	.5	Science of Nutrition	.5
Civil Government and Constitutional Law	.5	Anatomy and Physiology	.5	Botany	.5

AFTERNOON WORK.

Fruit Work 4	Cooking Practice. 4	Cooking Practice 4
Chemistry 6	Chemistry 6	Chemistry 6

JUNIOR YEAR.

Literature 5	Logic 3	Hygiene 5
German 3	German 3	German.... 8
Drawing 5	Drawing 5	Drawing 5
Biology.....2	Zoology 2	Horticulture 5
Psychology 3	Designing, Cutting and Fitting 5	Millinery 2

AFTERNOON WORK.

Bacteriology 6	Zoology 2	Floriculture 6

SENIOR YEAR.

History 5	Political Economy 3	Literature 5
German 3	History 5	German.... 3
Household Managem't..5	German.... ...3 and 2	Dairying 3
Aesthetics 3	Fancy Work 5	Geology..... 4
	Entomology 2	

AFTERNOON WORK.

Dairying 4	Household Accounts ...3	Geology 4

DOMESTIC ARTS SHORT COURSE.

This includes the studies of the freshman and sophomore years as given in the regular Domestic Arts Course.

The privilege is given of substituting, subject to the approval of the faculty, a household economy study for some study in the regular sophomore year.

COMMERCIAL COURSE.

The object of this course is to broaden the intelligence of accountants, and to prepare students for positions as business men, who form a large class, having a direct and important relation to the material, social, and political life of the nation. They should have associated with their technical work a knowledge of those subjects that will give them an enlarged view of their varied relations as citizens of the state. The college, therefore, offers here a much

broader general education than is common in commercial courses.

The technical feature of the course is a thorough training in penmanship, typewriting, stenography, commercial arithmetic, bookkeeping, business economics, political economy, history of commerce, and commercial law. The course is broad enough to prepare students for teaching, or for the study of the law.

For those who are unable to take the four years course, a course of two years is offered, which will fairly well qualify them for positions as accountants, and stenographers.

The department is well equipped with desks, counters, and typewriters, making the presentation of the technical work as practical as is possible in a college.

COMMERCIAL COURSE.

FRESHMAN YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Grammar 5	Rhetoric 5	Literature 5
Algebra 5	Algebra 3	Algebra 2
Greek History 2	Geometry 2	Geometry 3
Physics 3	Roman History 2	English History 3
Drawing 3	Physics 3	Physics 2
Elocution 2	Drawing 3	Drawing 3
	Elocution 2	Elocution 2
AFTERNOON WORK.		
Penmanship 5	Penmanship 5	Penmanship 5
Typewriting 5	Typewriting 5	Typewriting 5

SOPHOMORE YEAR.

Chemistry 3	Chemistry 3	Chemistry 3
Rhetoric 2	Rhetoric 2	Rhetoric 2
Solid Geometry and Higher Algebra 5	Trigonometry 5	Botany 5
Civil Government 5	Anatomy and Physiology 5	Anatomy and Physiology 5
AFTERNOON WORK.		
Chemistry 6	Chemistry 6	Chemistry 6
	Anatomy 2	Anatomy 2

JUNIOR YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Stenography 5	Stenography 5	Stenography 5
German 3	German 3	German 3
Commercial Arithmetic 5	Advanced Commercial Arithmetic 5	Geology 5
Psychology 3	Logic 3	Science of Bookkeeping 3
Biology 2	Zoology 2	Zoology 2
AFTERNOON WORK.		
Bacteriology 6	Mineralogy 6	Zoology 6
	Zoology 2	

SENIOR YEAR.

Commercial Law 5	Commercial Law 5	Commercial Law 5
German 3	German 3	German 3
History of Commerce ... 5	Political Economy 3	Business Economics ... 3
Literature 5	Elective 5	Literature 6
AFTERNOON WORK.		

Practical work in bookkeeping, banking, freighting, insurance, and kindred subjects, fron 2 to 4 daily.

SHORT COMMERCIAL COURSE.

FIRST YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Grammar 5	Rhetoric 5	Literature 5
Algebra 5	Algebra 3	Algebra 2
Greek History 2	Geometry 2	Geometry 3
Physics 3	Roman History 2	English History 3
Drawing 3	Physics 3	Science of Bookkeeping 3
Elocution 2	Drawing 3	Drawing 3
	Elocution 2	Elocution 2
AFTERNOON WORK.		
Penmanship 5	Penmanship 5	Penmanship 5
Typewriting 5	Typewriting 5	Typewriting 5

SECOND YEAR.

Stenography 5	Stenography 5	Stenography 5
Rhetoric 2	Rhetoric 2	Rhetoric 2
Commercial Arithmetic 5	Advanced Commercial Arithmetic 5	Commercial Geography 5
Civil Government 5	Political Economy 3	Commercial Law 5
AFTERNOON WORK.		

Practical work in bookkeeping, banking, freighting, insurance, and kindred subjects.

GENERAL SCIENCE COURSE.

This course is believed to be especially adapted to the need of those preparing to study medicine or pharmacy, or to take technological training abroad. It will also offer excellent preparation for those who expect to engage in teaching, especially in the teaching of the natural and physical sciences.

The student will elect either biology or chemistry, or physics, as a major study, and will take all the subjects specified under the course so elected. He must select from the other courses subject to the approval of the professor who teaches them, enough subjects to complete the course.

For the freshman and sophomore year, see Agricultural and Domestic Arts courses.

JUNIOR AND SENIOR YEARS.

Either biology, or physics, or chemistry, as follows:

BIOLOGY.

Anatomy and Physiology	Two Terms	General Biology	Three Terms
Bacteriology	One Term	Zoology, advanced	Two Terms
Entomology	Two Terms	Anthropology	One Term
English Literature	Two Terms	German	Six Terms
Geology	One Term	Organic Chemistry	Two Terms

CHEMISTRY.

Agricultural Chemistry	Two Terms	Organic Chemistry	Two Terms
Gen. Analyt. Chemistry	Three Terms	German	Six Terms
English Literature	Two Terms	Mineralogy	One Term
Geology	One Term	Zoology	Two Terms

PHYSICS.

Advanced Physics	Six Terms	Heat	One Term
Hydraulics	Two Terms	Strength of Materials	Two Terms
Geology	One Term	Analytical Geometry	Two Terms
Descriptive Geometry	Two Terms	Calculus	Three Terms
German	Six Terms	English Literature	Two Terms

The additional electives are to be chosen subject to the approval of the professor in charge of the department in which the major study has been chosen, and the faculty.

DEPARTMENTS OF INSTRUCTION.

In previous pages the order in which studies are pursued has been stated. Under the present title a somewhat detailed account will be given of the topics embraced in the several departments of instruction.

AGRICULTURE, ANIMAL INDUSTRY AND DAIRYING.

PROFESSORS FISCHER AND LINFIELD.

I. FARM EQUIPMENTS. This includes all the work coming under the designation "agriculture" in the first term of the junior year in the long course and in the corresponding term of the first year in the short course. The work covers in a general way the following topics: History of agriculture; barns and other farm buildings, including fences; the making of various plans by the student; roadmaking, draining, and irrigating; farm machinery. These general and practical subjects are placed in the first term because at that time the student is not prepared with a sufficient knowledge of elementary science to take up any of the specific subjects successfully. PROF. FISCHER.

II. BREEDS OF LIVESTOCK. This is made to include: The history and description of the different breeds of stock; their origin and development into the specialized animals of to-day; the effect of climate and management on the animals and their adaptability to various localities and purposes. The judging of live stock puts into practice the knowl-

edge gained in the class room; the student from exterior points tells the relative value of the animals for special purposes. PROF. LINFIELD.

III. SOILS AND MANURES. By the end of the second term of the junior year, in the long course, or first year in the short course, the student will have a sufficient knowledge of elementary science to study successfully the subject of soils and manures, these subjects covering the work in agriculture during the third term.

The following topics are included: The origin and composition of soils, general management of different soils and sub-soils, with their relation to successful crop production; manures, natural and artificial, their source and composition, differences in character, and the value of liquid and solid manures of different animals for different purposes; handling and preservation of natural manures; application of manures to different soils and for various crops; reclamation of alkali soils and worn out soils; preservation of original soil fertility. PROF. FISCHER.

IV. DAIRYING. Three hours a week during the first term of the senior year of the long course second and of the second year of short course are given to this subject as follows:

1. *Milk:* The elaboration, composition, and fermentation, of milk; the testing of milk, with a description of the methods used in paying for milk by the test, and in determining the worth of milk;

2. *Buttermaking:* The different methods of creaming milk and getting the best results are described; the handling and ripening of the cream, churning, salting, working, packing, and marketing the butter;

3. *Cheesemaking:* Cheddar cheesemaking is described; the making of a uniform product and dealing with practical difficulties are fully illustrated; a brief description is also given of the manufacture of other kinds of cheese, particularly of such kinds as may be made in a home dairy;

4. Factories: Factory organizations; the building, equipment, and management of factories are fully treated;

5. Practical work in the college dairy is given in testing milk, in buttermaking, and cheesemaking, during the fall term to all agricultural students; during the winter term to the Special Course students and during the spring term to the students in the Domestic Arts Course. PROF. LINFIELD.

V. STOCK BREEDING. This subject occupies two hours a week, during the first term of the senior year of the long course, and of the second year of the short course;

1. Breeding: The laws of reproduction, heredity, reversion, selection, period of gestation, and pedigree are fully discussed;

2. Management of Live Stock: This embraces a practical application of the principles of breeding, with a full description of methods of caring for the different classes of live stock from birth till final disposition. PROF. LINFIELD.

VI. FARM CROPS. This includes the history, uses, composition, cultivation and handling of different farm crops; the principles of rotation; the management of meadows and pastures. It occurs in the second term, senior year of the long course, and second year of the short Course, five times a week. PROF. FISCHER.

VII. STOCKFEEDING. This includes a study of the scientific principles underlying the profitable feeding of farm animals for market and home use. The principal topics dwelt upon are: The composition of the animal body and its various parts; the composition of food stuffs; the physiology of digestion; the adaptability of different foods for different animals; the calculation of feeding rations. It occurs three times weekly, during the last term of each course. PROF. FISCHER.

VIII. IRRIGATION ENGINEERING is intended to include the mechanical principles of draining and irrigating farm

lands; it occurs five times weekly for about four weeks of the second term of the senior year of the long course, or the second year of the short course. PROF. FORTIER.

BIOLOGY.

PROFESSOR BREWER.

I. ANATOMY AND PHYSIOLOGY. Lectures and recitations are given on human and comparative anatomy, illustrated by models, anatomical preparations, diagrams, and dissections.

The lecture course is supplemented by laboratory work both in the winter and spring terms, consisting of dissections of small animals; the study of osteology and a consideration of the elements of histology are also undertaken.

II. GENERAL BIOLOGY. The course of lectures on general biology and the accompanying laboratory work cover the usual range of topics. The difference between living and dead matter is reviewed, and such subjects as protoplasm, cells, tissues and organs are considered as an introduction to specialized work. Types of the lower vegetable kingdom (not included in the botanical course) and selections from the invertebrate and vertebrate divisions of animal life are taken for illustration and for examination in the laboratory.

III. ZOOLOGY. A comparative review is given of the various functions concerned in animal life and their adaptability to the environments of the different classes of animals. The classification of the animal kingdom, the morphology and the attributes of its different members, the distribution of animals according to place and time, their present location and their primeval forms are all considered.

IV. PROTOPHYTOLOGY. So much of this subject as relates to the moulds, ferments, etc., which are important factors in human and animal life, is treated of in lectures

and illustrated in the laboratory. Algae, diatoms, desmids and other forms are also discussed and illustrated.

V. ANTHROPOLOGY. A short course is given, in continuation of the general course, discussing the different types of the human race, existent at the present time in the various countries of the world; their relations, origin, and tribal differences; their dwellings and their implements.

VI. BACTERIOLOGY. This special branch of science, which has, during the last decade, made great strides, and which is so intimately connected with diseases affecting both man and animals, occupies a full course of lectures and also receives adequate laboratory exemplification. Research work in the germ causatives of disease, especially of animals, is made in connection with the experiment station, and students are familiarized with the processes used in bacteriology, such as the preparation of culture media, the culture and separation of germs, staining and mounting specimens of various bacteria, making sections of tissue, and general microscopical work.

The laboratory contains a full set of apparatus for the work of investigation, similar to that used in the laboratories of Professor Koch in Berlin, and of Professor Pasteur in Paris. Microscopes, microtomes, and the general accessories of laboratory investigation are also used by the students. It is intended that the course shall be so directed as to be of practical value after the College curriculum has been completed.

SANITARY SCIENCE. A course of lectures is given on the general principles of sanitary science as applied to the selection of sites for homes and the erection of the house; ventilation and heating; water supply and its uncontaminated preservation; removal of refuse and waste; food, its uses and abuses; adulterations of food and their detection, and general hygienic subjects.

BOTANY.

PROFESSOR FISCHER.

The work in this department may be classed under three heads:

I. ELEMENTARY BOTANY. This is given five times a week, during the spring term of the sophomore year in all the long courses, and in the first year of the Short Agricultural Course. It is a course in structural and systematic botany. The students are required to provide themselves with an inexpensive outfit, consisting of a three-legged lens, a sharp pocket knife and two dissecting needles. At the end of the term, each student must present an herbarium of fifty analyzed and neatly mounted and labeled specimens.

II. PHYSIOLOGICAL BOTANY. This is a laboratory course in plant histology, supplemented by lectures on plant physiology. It belongs to the senior year of the Agricultural Course.

III. ECONOMIC BOTANY. This is a general review of the history and uses of economic food, timber and medicinal plants, including a discussion of some of the most noxious weeds, and suggestions for their eradication.

In the last term of the senior year, two afternoons a week are devoted to the collection of a small local herbarium.

CHEMISTRY.

PROFESSOR WIDTSOE.

I. ELEMENTARY CHEMISTRY. This is a study of the important facts and fundamental theories of chemistry; the laws of chemical combination; the writing of reactions, and practice in solving stoichiometrical problems, together with the applications of chemistry in the arts and manufactures. Students taking this subject must also take the course in elementary practical chemistry.

II. ELEMENTARY PRACTICAL CHEMISTRY. This course supplements the preceding course and furnishes the necessary practical preparation for qualitative analysis. The non-metallic elements, mainly, are studied with reference to their combinations with each other; their reactions are verified, and the facts and theories of the lecture room are tested by experiments.

III. QUALITATIVE ANALYSIS. This course runs parallel with the descriptive study of the metals and their compounds and supplements. Under the direction of the instructor in chemistry the students apply with their own hands the reagents necessary to determine the composition and properties of chemical compounds. They thus gain a practical knowledge of the methods of chemical analysis and manipulation. Each student is required to analyze and report on forty unknown substances. This work is deemed extremely important from an educational as well as from a practical point of view. Laboratory work occupies six hours a week for thirty weeks.

IV. AGRICULTURAL CHEMISTRY. This is a series of lectures treating of the chemical problems of agriculture; composition of plants; sources of plant food; chemistry of animal nutrition, soils and dairy products. In the laboratory are taught the methods of agricultural analysis.

V. ORGANIC CHEMISTRY. This course is planned for students who intend to fit themselves for professional work in chemistry. It consists of a brief survey of the reactions and compounds of the fatty and aromatic series of hydrocarbons and their derivatives, together with a full discussion of the nature and influence of molecular structure. In the laboratory the student makes a number of organic preparations, which in their formation involve the methods of oxidation, reduction, substitution and synthesis.

NOTE: Each student taking a laboratory course in chemistry is required to deposit $2.50 for the first term and $1.25 for each succeeding term, to pay for chemicals, and to cover breakage.

COMMERCIAL BRANCHES.

PROFESSOR SHEPARD.

I. PRACTICAL BOOKKEEPING. The student obtains some capital, rents a place of business, deposits his money in the bank, transacts all kinds of business, thereby bringing into daily use such business forms as notes, drafts, checks, bill heads, statements, shipping invoices, account sales, receipts, deposit slips, certificates of deposit, mortgages, deeds, leases, insurance policies, bills of exchange, bills of sale. He is keeping books according to the shortest and most approved methods in various kinds of business, such as general merchandise, grocery, dry goods, clothing, coal, lumber, furniture, drug, jobbing, commission and shipping, brokerage, real estate, and for joint stock companies and corporations. Various business relations are entered into in the formation of agencies, partnerships, joint stock companies and corporations.

II. HISTORY OF COMMERCE. This work is done by recitations and lectures. The student makes a careful study of the principal countries of the world from which such staple articles of commerce as food, textile and mineral substances, metals and manufactured products are obtained. He notes the kinds and amount of such products from those countries, and the dependence of each upon every other for the necessaries and luxuries of life; he learns how markets are created and controlled; how waterways and railways afford a ready means of transportation and influence trade; and how the improved mail, postal, telephone and telegraph services facilitate the interchange of thought and also influence trade. Statistics are gathered showing the magnitude of the world's production. Practical commercial problems of the day are discussed in class.

III. COMMERCIAL LAW. This embraces a study of the customs and the law of the nature, formation, operation, interpretation, and discharge of contracts, including agency, partnership, corporation, bills, notes and checks, purchase and

sale of personal property, guarantee or suretyship, limitation of the time to sue, commission merchants and brokers, agreements for personal services, bailments, insurance, telegraphic communication, patents, copyright, trade marks, real estate conveyances, and the business and legal forms that are used to carry on trade.

IV. COMMERCIAL ARITHMETIC. This consists in a drill in addition, multiplication, division, fractions, measurements, metric system, percentage, profit and loss, commission, interest, discount, storage, equation of accounts, partnership settlements, and all the problems that the average business man is called upon to solve. Short methods are studied and practical devices presented.

V. BUSINESS ECONOMICS. The economic laws of trade, the general principles of Political Economy technically applied to commerce, and a discussion of business methods are carefully examined.

VI. PENMANSHIP. A plain legible style of writing with a rapid movement is taught daily throughout the year. It is required of commercial students; elective to others.

VII. SCIENCE OF BOOKKEEPING. This embraces the underlying principles of single and double entry bookkeeping; opening and closing books; journalizing, posting, and classifying accounts. Especial attention is given to making the original or charge entry, the legal as well as the scientific feature of the entry being kept in mind.

VIII. STENOGRAPHY. This is required of second year students in the Short Commercial course, and of junior students in the four years' Commercial Course. Graham's system of Standard Phonography is taught. The class is given one hour's instruction daily throughout the year. MR. DRYDEN.

Text Book: Graham's *Handbook*.

IX. TYPEWRITING is required of all first year students in both commercial courses. Three different kinds of machine are used, the Remington, the Caligraph, and the

Smith-Premier. An hour a day is given to typewriting throughout the year. MR. DRYDEN.

DOMESTIC ARTS.

1. HOUSEHOLD ECONOMY AND ÆSTHETICS.

MRS. COTEY.

EXPLANATION. The course for young women gives the same general training in English, German, Mathematics and Science that is given in the other courses, together with special studies adapted to woman's work.

1. LAUNDRYING occupies the fall term and consists of practical work alternating with lectures. The practice includes plain white washing and removing stains, clear starching, best methods of doing up fine mull, of ironing shirts, cuffs and collars, washing flannels and cleaning silk and fine woolen goods. The lectures treat of the chemistry of the various materials used and of hard waters and the process of softening them. Soaps, washing fluids, bleaching powders, bluings and starch are discussed in their scientific and practical relations to laundry work.

2. FRUIT WORK includes canning by various methods, and making all kinds of preserves and marmalade; different methods of making jellies, and experiments with green and ripe fruits; the making of all kinds of ketchups, spiced fruits, sweet and sour pickles, table sauces and meat relishes; the preparing of fruit juices, cordials and syrups. The latter part of the term's work is a course of lectures on the chemical nature of fruit, its acids and sugars; the value of fruit as food, and its action on the human system; the causes of fruit fermentation, and a study of antiseptics.

3. COOKING LECTURES treat of marketing and the selection of food; general rules of measuring and mixing; best methods of baking and boiling; deep and shallow frying; the

general chemistry of cooking; carving and serving of food.

4. COOKING PRACTICE includes all kinds of plain and some fancy cooking, covering in a general way all the subjects with which a housekeeper in moderate circumstances needs to be familiar. Demonstration lessons are given at various times throughout the term on subjects difficult of treatment in the general practice.

A three-course lunch is served daily during the winter term. Members of the class take turns in presiding as hostess at the table, carving and serving plates and looking after the needs of the guests; they also take turns in waiting upon the table. The confidence and skill thus acquired are invaluable to them.

5. SCIENCE OF NUTRITION is a study of foods, their chemical composition, characteristics, digestibility; the way in which they nourish the body; the best foods to be given in certain diseases; the best food for young children; effect of age, climate and occupation on amount and kind of food required. In connection with these lectures, about forty lessons are given in preparing food for the sick.

6. HYGIENE treats of sanitary conditions about the home; dangers from damp and unclean cellars, foul drains and sinks; ventilation, heating and lighting; instruction especially necessary to women on the care of personal health; home nursing, with illustrative lessons on changing beds for the sick.

7. HOUSEHOLD MANAGEMENT consists of lectures on the convenient arrangement and economical furnishing of rooms; the best methods of doing all kinds of housework, with a view to economy of time and strength; duties of mistress and servants; entertainment of guests, and many other subjects of interest to the home-maker.

8. AESTHETICS is the science of taste and beauty. The course includes talks on fine china, pictures, furniture, decorations for the home, harmony of colors, taste in dress, and kindred subjects.

II. SEWING.

MISS BOWEN.

EXPLANATION. Besides the general advantages derived from industrial education, the object of this branch is to give a practical training in the sewing which every household requires. Neatness of work is insisted upon. The student provides her own material and makes her own garments.

1. PIECE SEWING. Practice is given first in the various hand stitches used in muslin and woolen goods; overhanging, running, hemming, hemstitching, overcasting, felling, gathering and stroking gathers, buttonholes, gusset, patching and darning, French hem on damask, etc.

2. DRESSMAKING. At least two muslin garments are made. A gown is cut out, basted and entirely made by the student.

3. DESIGNING, CUTTING AND FITTING. Instruction is given by talks on grace in design of costume and harmony of color. Special attention is given to hygienic modes of dress. The student is taught to make drawings of the costumes which she designs. She also learns to draft patterns from measurements. Further practice is given in cutting and fitting.

4. FANCY WORK. This course includes Kensington embroidery, Roman cut-work, Spanish laid-work, drawn-work, jeweled embroidery, and modern lace-making.

5. MILLINERY. This course comprises instruction in frame-making, facings, shirring, making bows, lining, wiring, and the like. General instruction is given in making tasteful hats and bonnets.

DRAWING.

PROFESSOR CANNON.

I. FREEHAND DRAWING. This consists in lessons and practice, perspective sketching from casts, and simple studies in light and shadow. It is required of all freshmen, the exercises coming three times a week during the year. It is made to include industrial design.

The junior students in the Domestic Arts course have special training in designing, and elementary art, suitable for young women.

II. MECHANICAL DRAWING is taught during the entire junior year. Students in this class are required to make working drawings, both detail and assembly, from measurement. Simple designs illustrating the principles taught in the class in mechanism form a prominent feature. Neatness and accuracy of execution determine largely the standard of marking.

III. MACHINE DESIGN. In machine design each student is required to make a certain number of designs carrying out the principles of applied mechanics and dynamics of machines in all calculations. Boilers, parts of engines, pulley and gear shafts, and hangers, form suitable examples for this work. The class work consists of lectures and drawing.

IV. THESIS. In general a graduating thesis in this course should consist of the execution of an original design with a descriptive dissertation or a discussion of some current engineering problem, or the result of some original research, experimental or theoretical.

ELOCUTION AND DECLAMATION.

MISS KENYON.

It is the object of this department to make good readers, easy conversers and fluent speakers; to make the voice and the body fit instruments to serve the soul and mind. The course then will include the development of the voice and the training of the body to respond to the changes of thought and emotion.

I. READING. The work consists of a study of some of the minor English classics. Those read during the past school year were Scott's *Lady of the Lake*, Longfellow's *Miles Standish*, Pope's *Essay on Criticism*, Arnold's *Sohrab and Rustum*, and Shakespeare's *Julius Cæsar*. The object of this work is incidentally to create a taste for good literature and to furnish profitable drill in the art of reading. It is required of all sub-freshmen.

II. ELOCUTION. 1. This is made to embrace voice culture, articulation and plain reading.

2. Inflection, pronunciation, gesture, and expression in reading.

3. Gesture continued, practical work in recitations and impersonation.

III. DECLAMATION AND RECITATION. All freshmen meet twice a week during the year for declamations and recitations previously prepared. These exercises aim to apply the general principles of elocution. The drill gives prominence to correct pronunciation, and distinct enunciation, as well as posture and gesture. Each student is expected to present an exercise once a fortnight or as often as the number in classes or divisions will allow.

ENGINEERING.

I. CIVIL ENGINEERING.

PROFESSOR FORTIER.

1. HYDRAULICS. This includes a discussion of the fundamental laws governing the equilibrium of fluids; the flow through orifices and pipes, over weirs and in open channels; the measurement of water; the action of water upon vanes, water-wheels and pumping engines.

Text Book: Merriman's *Hydraulics.*

2. IRRIGATION ENGINEERING includes the location, grades, cross-sections, etc., of canals; the design and construction of flumes, head-gates, diversion weirs and dams; pipe irrigation and inverted siphons; rainfall, evaporation and seepage; methods of irrigation; duty of water; windmills, artesian wells, etc.

Text Books; Wilson's *Manual of Irrigation* and works of reference.

3. ELEMENTARY SURVEYING embraces the adjustment of instruments, the location of railways, pipe lines and canals, city, mining, and hydraulic surveying. Field practice in the afternoon of the first and third terms.

Text Book: Johnson's *Surveying.*

4. HIGHER SURVEYING. Measuring base lines, triangulation, practical astronomy, the determination of the meridian, time, latitude, longitude.

Text Books: Johnson's *Surveying*; Merriman's *Geodesy.*

5. MATERIALS OF ENGINEERING. This is a course of daily lectures throughout the last term to supplement the practical knowledge obtained in the carpentry, blacksmith, foundry, and machine shops, by notes on stone, brick, lime, cement, iron, steel, and alloys.

6. ROADS AND PAVEMENTS. Country roads are discussed along with highways, their location, construction

and maintenance; the paving of city streets and sidewalks; the materials used and mode of construction.

Text Book: Bryne's *Highway Construction.*

7. ROOFS AND BRIDGES. This is an application of the study of mechanics to roofs and bridges; dead and live loads; lateral truss systems; pin connected structures; rivets and riveting; marketable forms of iron and steel and their application in the design of roofs and bridges.

Text Book: Johnson's *Theory and Practice of Modern Framed Structures.*

8. MUNICIPAL ENGINEERING embraces water-works systems; gas and electric lighting; rapid transit and sewerage.

Lecture Notes.

9. APPLIED ELECTRICITY. To strengthen the civil and mechanical engineering departments it is intended soon to appoint an instructor in this subject. In the mean time the senior students will receive a course of lectures on the electric transmission of power and its efficiency as compared with compressed air, the generation of electric power by means of water, power houses and electric street railways.

10. SUMMER REPORT. Each student, upon entering the senior year in civil engineering, is required to present a report prepared by himself during the summer vacation on some structural work connected with the profession.

II. MECHANICAL ENGINEERING.

PROFESSOR JENSEN.

1. ELEMENTS OF MECHANISM. This includes a consideration of the various forms of motion and its production; link motions and their modification as used in machinery; cam and wiper outlines; wheel-trams and aggregate motions; design and construction of gear teeth; mechanism of special machinery. This subject deals with the purely geo-

metrical relations of machinery rather than with the form and design of articulating parts.

2. METALLURGY OF IRON AND STEEL. This embraces a study of the principal iron ores and their reduction according to modern methods, and the processes employed in the preparation of the iron into the various forms used for general and construction purposes.

3. STEAM ENGINEERING. This begins with a study of the various forms of valve gears now in common use, which is followed by the study of the various forms of engines, the principles of thermodynamics according to the mechanical theory of heat and its application to the steam and other vapor engines, boilers and boiler design and construction, and also methods of testing steam engines and steam boilers. A careful study is made of such data as have been derived from reliable tests in lieu of making actual tests.

4. APPLIED MECHANICS. A general discussion is given of the relation of forces and their effects in the production of motion; the derivation and application of formulæ, based upon the strength of materials as determined from actual experiment on full sized pieces, and used in determining the size of parts to be used in all engineering structures. Much stress is laid upon this subject as being the chief corner stone in the foundation of an engineering profession.

5. DYNAMICS OF MACHINES. The general effects of the inertia of the moving parts of machines are discussed.

POWER MEASUREMENT AND TRANSMISSION. This is a study of theory of friction and suitable co-efficients for use with various materials and kinds of joints; friction brakes and dynamometers; lubricators and their uses; transference of power by means of rigid contact, rope and belt driving, compressed fluids, and electrical transmission.

For a description of courses in hydraulics, municipal, and irrigation engineering, materials of engineering, applied electricity, see "Civil Engineering."

For a description of courses in mechanical drawing and descriptive geometry, see "Drawing."

For shopwork, see "Mechanic Arts."
For other courses, see "Physics and Mathematics."

ENGLISH LITERATURE AND GERMAN.

I. ENGLISH LANGUAGE AND LITERATURE.

PROFESSOR MACEWAN.

1. ENGLISH GRAMMAR. The work in English embraces grammar, rhetoric and literature, and runs parallel through all the four-year courses. In grammar, after a review of etymology, with special attention to the formation of the verb, the structure of the English sentence is carefully examined. Nearly a term is spent in analyzing sentences from classic authors. This work ocupies the fall term.

2. ELEMENTARY RHETORIC. This includes the principles of invention, the elements of style and the different forms of composition. The preparation of manuscript for the printer is taught in connection with the written work. Essays are required once a fortnight, mostly reproductions, illustrating the laws of description and narration. The narrative poems from Syle's *From Millon to Tennyson* furnish matter for reproduction and study in versification. This work occupies the winter term.

3. ARGUMENTATION. Instead of more advanced general rhetoric, the rules of argument are studied; and to illustrate and enforce these, some masterpieces are critically examined. The speeches in Baker's *Specimens of Argumentation* furnish suitable material. Frequent oral and written exercises make the work entirely practical; debates, written and oral, are had on questions of general interest. Each student presents three written exercises. The work goes through the sophomore year, twice a week.

4. LITERATURE. The first work in literature follows the elementary rhetoric, occupying the third term of the fresh-

man year. It is a critical study of the short, complete classics—essays, poems of various kinds, speeches, sketches and stories. Enough of each author and his times is told in familiar lectures to awaken interest, and show the occasion of the production. In this work constant reference is made to rhetorical principles, and the style of different authors is carefully compared, and both style and form are studied with reference to the thought and sentiment. The following texts have been read:

Shakespeare's *Merchant of Venice*; Bacon's *Essays*—Selections; Milton's *L'Allegro*, *Il Penseroso*, *Hymn*, and *Lycidas;* Addison's *Sir Roger De Coverly;* Pope's *Rape of the Lock;* Gray's *Elegy in a Country Churchyard;* Goldsmith's *Deserted Village*, and *Traveller;* Burns's *Cottar's Saturday Night*, and some other poems; Wordsworth's *Ode on Immortality*, and narratives from *The Excursion*; Irving's *Sketch-book;* Tennyson's *Ulysses*, *Locksley Hall*, *Enoch Arden;* Dickens's *Christmas Carols;* selections from Emerson, Lowell, Holmes, Longfellow, and Hawthorne; the selections in Swinton's *Masterpieces*, Pancoast's *Representative Literature;* Painter's *Introduction;* Syle's *From Milton to Tennyson.*

5. HISTORY OF LITERATURE. The second course is given to a historical survey of literature, from Chaucer to the present time. Sufficient attention is given to the leading authors of the different periods to make evident the characteristics of their thought and style. The English drama receives special attention, and one day each week is given to reading Shakespeare. Much of the time is given to the critical reading of such texts as supplement, but not duplicate the first and third courses, much of the study being reported in essays. This is the work of all juniors for the first term.

6. LITERATURE: MASTERPIECES. The last term of the senior year is given to the study of longer masterpieces. All the important forms of literature are laid under contribution—the drama, the epic, the lyric, the novel, the essay biographical and critical, the oration and history. One

week is given to each piece selected. The work of the class-room is largely a report of students, either oral or written, on what they have done by themselves.

The following course, or its equivalent—texts changing somewhat from year to year—is required of all seniors, third term.

Shakespeare, two great tragedies, *Hamlet*, *Macbeth*, *Lear*, *Othello;* Webster, *Reply to Hayne;* Burke, *Conciliation with American Colonies;* Macaulay, *Essay on Milton* and *Addison;* Milton and Carlyle *Essay on Johnson;* Milton, *Paradise Lost*, *I.* and *II.*, *Samson Agonistes;* Carlyle, *Essay on Burns*, *Hero as Prophet;* Tennyson, *Princess*, or selected poems; Motley, *Peter the Great*, or Southey, *Nelson*; George Eliot, *Silas Marner*; Wordsworth, *Selected Poems*, Ed. by M. Arnold; Byron, *Childe Harold.*

II. GERMAN.

PROFESSOR MACEWAN AND MR. ROBINSON.

This is the only foreign language taught in the institution, and is in three courses, three hours a week, during the junior and senior years. The Germans are now the leaders in agricultural science. The advanced student of agriculture must be able to read the literature on his subject coming from the German press. Moreover a knowledge of German is deemed essential to a liberal education. These are the reasons for the appearance of this language in these courses. Oral and written exercises are accompanied by conversation, making more familiar the vocabulary and accustoming the ear as well as the eye to the words. In the time allotted only the framework of the language can be mastered; but enough is given to enable the student to prosecute independent study and consult German books.

After completing the *Joynes-Meissner Grammar* and *Reading-book*, students are given such scientific reading material as will best equip them for using works of reference and the publications of scientific institutions and societies; or such selections from classic German literature as

are adapted to awaken an interest and stimulate further reading. Gore's or Dippold's *Scientific German Reader; Wilhelm Tell, Nathan Der Weise, Egmont, Hermann und Dorothea, Reisebilder, Ekkehart, Peter Schlemihl, Das Kalte Herz.*

ENTOMOLOGY.

PROFESSOR FISCHER.

This work extends over two terms and consists of lectures and laboratory work. In the first term the student acquires a general knowledge of the structure and classification of the insect group. The second term is devoted to lectures on economic entomology; the most common insect pests, and remedies for their control, together with methods for applying insecticides are considered.

GEOLOGY AND MINERALOGY.

PROFESSOR WIDTSOE.

I. MINERALOGY AND ASSAYING. A systematic study is made of the important mineral species according to Dana's classification. Much practice is given in blow-pipe analysis and determinative mineralogy; and in connection with the former, the simple methods of dry assaying are taught. To those especially interested in the subject, opportunities are given for practice in all methods of dry and wet assaying.

II. GEOLOGY AND LITHOLOGY. A course is given in general and economic geology in which particular attention is given to dynamical and structural geology. Along with the occurrence of rocks is studied, their mineralogical composition also. The instruction is based on a text-book but supplementary lectures are given. Weekly excursions give practice in geological field work and material for reports.

HISTORY.

PROFESSOR JOHN T. CAINE, JR.

The chief objects of this study are the fixing of the principal great historical events in the memory, the training of the reason and the historic sense, and the cultivation of the taste for historical reading. Outlines are made and memorized, and questions are suggested that require research, and stimulate independent thought. While original sources cannot well be examined, considerable reference reading is required. For this purpose, the College library is better equipped in historical literature, than in any other. Meyers's textbooks are used; but no slavish following of any one book is expected. Time is taken to compare conflicting statements of fact, and different interpretations. All available sources of information are used. The work extends through the freshman year, twice or three times a week.

I. GRECIAN HISTORY. The first term is given to Grecian history, some attention being paid to the Oriental nations, specially to those events which influenced in a noticeable manner subsequent European nations. Most of the time is occupied with a study of the conflicting cities and States of Greece, their advancement in oratory, literature and the fine arts.

II. ROMAN HISTORY. The second term is given to the history of Rome—her rise, rapid extension, wonderful vigor and extension of her power, her fall and final extinction, the survival of her better qualities and the gradual development of the nations of modern Europe.

III. ENGLISH HISTORY. During the third term attention is given to the history of England as the great exponent of human liberty, the rise and extension of her institutions, the settlement of her American Colonies, and the growth of her ideas and civilization on American soil.

HORTICULTURE.

PROFESSOR FOSTER.

EXPLANATION. Five lectures a week are given on this subject during the second and third terms of the junior year of the long Agricultural Course, and during the same terms of the second year in the short course. One term of five hours per week is required for the senior year in the Domestic Arts Course.

The work will be as follows:

I. FRUITS AND VEGETABLES. This consists of lectures and field work. It includes the selection and preparation of the soil, methods of propagation, seeding, grafting by the various methods, budding and layering, the pruning and care of orchards, picking, packing, marketing and preservation of fruits.

II. FORESTRY. This is a discussion of the propagation and care of forest trees best adapted to this region. Special attention is given to the effect of forests on the conservation of moisture and the effect of the latter on the agriculture of the country.

III. FLORICULTURE attempts to give instruction and practice in the care of house plants, and flower gardening.

IV. THE PROPAGATING HOUSE. One afternoon a week in the winter term is given to root grafting and other work in the propagating house.

MATHEMATICS.

PROFESSORS CANNON AND LANGTON.

ALGEBRA. A thorough drill in the elements of Algebra, with special attention to fractions, factoring, simultaneous equations, involution and evolution, and radical expressions, is given all freshmen during the first term every day, and every other day during the rest of the year.

PLANE GEOMETRY. Oral and written recitations in the elements of Plane Geometry are required of freshmen half the time during the winter and spring terms.

HIGHER ALGEBRA embraces a study of quadratic equations; simple indeterminate equations, inequalities, theory of exponents; logarithms; ratio and variation; series and the binomial and exponential theorems, during the full term of the sophomore year.

SOLID GEOMETRY involves recitations on the relation of lines and planes in space, area of surfaces; volume of solids; and the solution of practical problems. It comes in the second term sophomore year.

TRIGONOMETRY embraces a study of the use of logarithms in the solution of right and oblique trangles, and the deduction and use of trigonometric formulæ. Second and third term sophomore year.

SURVEYING occupies eleven weeks, two recitations a week, and four hours field practice a week. The solution of practical problems; the use of the compass and transit in the measurement of distance by triangulation and in land surveying, and the use of the level in establishing grades, are the most important features of the work.

DESCRIPTIVE GEOMETRY, is confined to the representation of problems, and the solution of problems relating to geometrical magnitudes in space.

CALCULUS. A general survey of the differential calculus is given together with solution of higher plane curves, and the ordinary methods of integration, following Osborne's text.

ANALYTICAL GEOMETRY embraces the reference of points and lines to co-ordinate axes and the deduction of equations of the straight line and curves of the conic sections.

DESCRIPTIVE GEOMETRY is made to cover orthographic projections and development; projections of plane and solid figures; curved surfaces and tangent planes; shades and

shadows; construction of maps; solution of problems relating to geometrical magnitudes.

Other courses in applied mathematics are described under Civil and Mechanical Engineering. The last four subjects are given to only Engineering students.

MECHANIC ARTS.

MR. MAYO.

I. TECHNICAL INSTRUCTION.

1. This embraces weekly lectures and recitations (1) running through the fall term of the freshman year, on the form and use of wood-working tools, and on the growth, felling and seasoning of timber; and (2) running through the spring term, on the construction and operation of wood-working machines.

2. Lectures are given twice a week during the winter term of the junior year, on the theory of pattern-making; and during the spring term on metal working appliances.

II. SHOP PRACTICE.

1. BENCH WORK IN WOOD includes exercises in planing, sawing, chiseling, rabbeting, plowing, splicing, mortising, tenoning, dove-tailing, framing, paneling, and general use of carpenter's tools.

2. WOOD TURNING covers all the principles of straight turning, face plate and chuck work.

3. IRON FORGING embraces drawing, bending, twisting, cutting, punching, upsetting, welding, and the use of flatters, fullers, swages, etc. These principles are applied in the making of a pair of tongs for use in shop. Other articles are made, such as andirons and ornamental gates, if time permits.

4. STEEL FORGING embraces the forging and tempering

of punches, cold chisels, drills, lathe and planer tools, springs, and the welding of steel to iron and iron to steel, annealing, case hardening, and coloring are also taught.

5. CABINET MAKING is the actual construction of articles of furniture, this being a practical application of the principles learned in bench and lathe work, with some little wood carving added.

6. WOOD-CARVING is given only to special students who have the necessary preparation.

The work numbered 1 and 2 occupies the full term of the freshman year, that marked 3 and 4, the winter term; that marked 5 and 6, the spring term. During the junior year shop work is continued as follows:

1. PATTERN MAKING, in the winter term, embraces a number of exercises in the construction of simple and built up patterns and core boxes.

2. VISE WORK, during the fall term, in iron, embraces chipping, filing, scraping, thread cutting, hand polishing, cutting of kep seats, riveting, brazing and soldering.

3. MACHINE WORK, in the opening term, embraces straight, paper and eccentric turning, thread cutting, face plate and chuck work, taper boring, use of boring bar, and milling on the engine lathe, surfacing, cutting of V, dove-tail and T grooves, and kep seating on planer, plain milling, grooving of taps, reamers, etc., gear cutting and grooving of twist drills on milling machines, drilling and boring in drill press, grinding and buffing on emery wheel.

METEOROLOGY.

MR. DRYDEN.

This is an optional course for junior and senior students, and includes an elementary study of air pressure, humidity, temperature, rainfall, evaporation, wind velocity, theory of storms, methods of forecasting, and a general study of the

United States Weather Service, with special reference to the relation of climate to health and to agriculture. The reading of the weather instruments in use at the College is made a part of the work.

MILITARY SCIENCE AND TACTICS,

LIEUTENANT STYER.

This course is in charge of an officer of the United States Army, detailed by the Secretary of War. The Government furnishes Springfield cadet rifles and equipment for infantry drill and two rifled-cannon for artillery instruction. A uniform of dark blue is worn by the cadets, the cost of which, including cap, is about fifteen dollars.

The attention of students intending to enter College is called to the fact that this uniform has been found more serviceable than a suit of civilian clothes of the same price, and they are requested to make arrangements so as to be able to order this uniform when they enter. On all occasions of drill, or when students are receiving any other military instruction, they are required to appear in uniform as prescribed by the College.

I. INFANTRY. This includes all the movements described in the drill regulations of the U. S. Army, from gymnastic instruction in the setting up exercises, the school of the soldier and bayonet exercise, to the drill by company and battalion; exercise in estimating distances by sign and also by sound; target practice with rifle, for which the government makes an annual allowance of ammunition; instruction in signalling with flag and in military telegraphy.

II. ARTILLERY. This embraces drill in the manual of the piece, and target practice when practicable.

III. THEORETICAL INSTRUCTION. During the winter months when outdoor drills are necessarily suspended, instruction is given by means of recitation from the drill regulations and by lectures on the elements of military

science. Daily from 11:40 to 12:10 a. m. Required of all students except juniors and seniors.

PHILOSOPHY.

PSYCHOLOGY is a study of the principal facts and theories of the science of mind, as an introduction to philosophy. The bearing of the subject on education is emphasized, and the student is made familiar with the great names in philosophy, and with the main doctrines of the different schools.

LOGIC. The science of reasoning is considered by text-book lessons from Hill's-Jevons's Logic. The chapters on Forms, Propositions, Syllogisms, Induction, Deduction, and Fallacies are studied and recited.

AESTHETICS. A series of lessons is given on the science of taste and the theories of the beautiful in art and nature. Reference to the history and development of the fine arts is frequently made, and the subject is elucidated by concrete examples and suggestive illustrations. Three times a week throughout the fall term.

PHYSICAL CULTURE.

MISS KENYON.

I. GYMNASTICS. Systematic exercises are given in free gymnastics, and in light gymnastics with Indian clubs, dumb-bells, swings, and weight machines.

II. LADIES' MILITARY DRILL. Regular infantry tactics with light rifles, occupies the same time with young women, as with young men.

PHYSICS.

PROFESSOR JENSEN.

I. ELEMENTARY PHYSICS. This is an introductory science course; in which the important laws of natural philosophy are stated and discussed. The current hypothesis of the constitution of matter is made the subject of especial study and all problems are referred back to it for their final explanations. Illustrations of the modern methods of scientific reasoning are given, and numerous practical problems, bearing on the subject in hand, are solved in and out of the class room.

II. HEAT AND ELECTRICITY. This course has been introduced especially for engineering students. The law of conservation of energy is made the fundamental principle, and the relations and effects of the various qualities are explained upon this basis. The mechanical equivalent of these forms of energy and the processes of transformation from one form to another and problems involving this principle are made a prominent feature.

III. ELEMENTARY MECHANICS. This involves an elementary consideration of the composition and resolution of forces, the measurement of forces, dynamics, hydrostatics, and pneumatics, supplemented with numerous problems selected from probable occurrences in the construction of buildings and machinery.

IV. PHYSICAL LABORATORY work includes measurements in heat and electricity.

V. ADVANCED PHYSICS. Heat, steam engine, steam boilers, electricity, elements of mechanism, and other courses in higher and applied physics are described under Civil and Mechanical Engineering.

POLITICAL SCIENCE.

PRESIDENT TANNER.

I. CIVIL GOVERNMENT AND CONSTITUTIONAL LAW. A study is made of the township, county, municipal, state, and national government, showing the evolution of the higher from the lower forms, with especial attention to the origin of each form. The present meaning and force of the national constitution is also considered. Fiske's *Civil Government* and Cooley's *Constitutional Law*.

II. POLITICAL ECONOMY. Three recitations a week from Laveleye's *Political Economy* are supplemented by illustrative statistics, explanations, and assigned readings. Original research and discussion are encouraged so as to give reality and interest to the consideration of the economic problems that now engage the highest thought of the country.

VETERINARY SCIENCE.

PROFESSOR FISCHER.

This subject embraces a series of lectures, which are delivered five times week a throughout a whole year in both courses in agriculture. No attempt is made to turn out veterinarians in any sense of the word, but simply to give the student of agriculture, such an elementary knowledge of veterinary medicine as will enable him to treat some of the commoner and simpler forms of disease, to avoid dangerous exposure of the animals under his care, and to recognize the importance of strict attention to the hygiene of his farm animals.

The following is a short synopsis of the work:

I. ANATOMY OF THE HORSE. This subject is studied in the following order during the fall term—Osseous system, muscular system, digestive system, respiratory system, urinary system, vascular system, nervous system, organs of generation.

II. MATERIA MEDICA. During the winter term general pathology, therapeutics, and surgery receive attention. During this term one or more horses are dissected.

III. SPECIAL PATHOLOGY and therapeutics (contagious and infectious disease) and principles of horse shoeing are discussed.

INSTRUMENTAL MUSIC.

MRS. GOODWIN.

Provision is made for instruction on the Piano, Reed Organ, and Guitar. There are four superior pianos and two cabinet organs in the College, and the music rooms will be used by pupils as heretofore. Beautiful guitars of sweet tone are made in the wood-work shops.

Details, as to time of lessons and conditions, will be announced at the commencement of each term.

That music is a great, perhaps the greatest, refiner of human nature is incontestible. Cruelty and brutality, generally the accompaniment of unmelodious races, become rarer as the musical feeling grows, and music is a predominant characteristic of refined and gentle natures. Undoubtedly, therefore, music may be made a potent factor in civilization, because the tenderest feelings of men, cultured or uncultured, are awakened by it. This result may be obtained more easily when the heart is fully enlisted and the faculties of the mind are fully exercised, thus making music one of the noblest factors in the education of the soul. It is intended to foster the taste for music among the students as fully as is consistent with the pursuit of their studies in other directions.

PREPARATORY DEPARTMENT.

Many of the settlements of Utah have barely passed their pioneer days. From such sections no great advance in education could be expected, and in some the schools are quite primitive. As a consequence many young men and women who have had to work hard with their parents in the varied operations of home making, find themselves without the educational start which their integrity merits. They have given their time to the material progress of the State, and now feel that they are entitled to a share of its intellectual advancement. In some of the thinly populated districts, schools are not regularly kept, and those that are, do not provide instruction generally adapted to the age and wants of the class referred to.

It therefore seems obvious, that until these young people pass the time they may devote to school, justice demands some provision for them in our higher educational institutions. The College maintains a department for such students and offers them the following studies:

SUB-FRESHMAN YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Grammar 5	Grammar 5	Grammar and Composition 5
Arithmetic 5	Arithmetic 5	Arithmetic and Algebra 5
Geography 5	History 5	History 5
Reading 2	Reading 2	Reading and Declamation 3
AFTERNOON WORK.		
Penmanship 5	Penmanship 5	Penmanship 5
Drawing 5	Drawing 5	Drawing 5

WINTER COURSES.

I. FARMERS' COURSE. Beginning in January, a

course of special lectures on agricultural subjects is given for the benefit of any farmer that may wish to attend. The course includes agriculture, horticulture, entomology, botany, chemistry, veterinary science, and dairying, treated almost wholly from the practical side, and continuing one term, till the end of March.

A special circular describing this course will be mailed upon application.

II. WOMEN'S COURSE. A special course in sewing, household management, cooking, and such literary or scientific studies in addition thereto as the student is prepared to pursue, is offered to women during the winter term.

Special circulars describing this course are issued.

EXAMINATIONS.

Instructors keep a record of recitations, marked according to the decimal system. In making up final examination percentages, this is counted one-third, the mid-term examination one-third, and final examination for the term, one-third. But students who have been in a class only four-fifths, or less, of a term (or whose absences amount to one-fifth or more of the term) shall pass the whole subject upon examination. In all four year courses, an average standing of not less than 75 per cent., with no mark less than 60 per cent., will be required for graduation. Any student falling below 60 per cent. for a month, may be dropped from the class.

GRADUATION.

The degree of Bachelor of Science is conferred upon completion of any of the four year courses. A certificate is granted for the completion of any short course.

COLLEGE CHARGES.

Tuition is free. An entrance fee of $5 is charged for each year of the college course; for a single term $2.50. The privileges of the library, museum, etc., are free to students. In the chemical laboratory, work shops and cooking rooms, students are charged for the cost of the materials actually used by them in their exercises, the cost varying from $2 to $4 per year in each industrial or laboratory course.

Certificates of graduation in short course, $2.50.

Bachelor of Science diploma, $5.

MUSEUM.

DR. BREWER, Curator.

THE MUSEUM contains a considerable number of specimens illustrative of Geology and Palæontology, Vertebrate and Invertebrate Zoology, and Mineralogy; also about four thousand five hundred species of the Rocky Mountain flora, and a large number of the woods of the United States. There is also an extensive collection of grain representing the produce of Utah and other States. A small collection of Indian and Polynesian products and curiosities has been made.

Donations to the museum will be highly appreciated.

LIBRARY.

MRS. GOODWIN, Librarian.

The general library contains about three thousand volumes and several hundred pamphlets. The subjects covered are general literature, including poetry and fiction, travel, history, biography and criticism; political economy, sociology, metaphysics, general science, and such of the special sciences as are included in the courses of the several departments. The Professor of English Literature, whose private library contains about two thousand eight hundred volumes, allows to advanced students in his own classes, the

privilege of the use of his library under his direction. Some of the other professors also accord access to their private libraries as occasion may require. A large addition of books will be made to the general library during the coming year.

The library and reading room are open to the students and to the general public every College day throughout the year.

The list of periodicals placed in the reading room upon subscription is as follows:

LITERARY MAGAZINES.

Atlantic Monthly.
Century.
Cosmopolitan.
Critic.
Edinburgh Review.
Education.
Forum.
Harper's Bazar.
Harper's Monthly.
Harper's Weekly.
Journal of Education.
Judge.
Ladies' Home Journal.
Literary World.
McClure's Magazine.
Munsey's Magazine.
Nation.
North American Review.
Outlook.
Peterson's Magazine.
Puck.
Review of Reviews.
Scribner's Magazine.
Student's Journal.
University Chronicle.
University Magazine.
Youth's Companion.

SCIENTIFIC AND TECHNICAL MAGAZINES.

American Machinist.
American Journal of Politics
American Naturalist.
Art Education.
Delineator.
Engineering Magazine.
Good Housekeeping.
Housekeeper.
Journal of American Folk Lore.
Journal of Association of Engineering Societies.
Le Bon Temps.
Machinery.
Nature.
Popular Science Monthly.
Sanitarian.
Science.
ScientificAmerican.
Scientific American—Building Edition.
Scientific American Supplement.
Studies in Historical and Political Science.
Table Talk.
Transactions of American Society of Mechanical Engineering.
Veterinary Magazine.
Werner's Voice Magazine.

AGRICULTURAL MAGAZINES.

Agricultural Science.
American Bee Journal.
American Gardening.
Breeder's Gazette.
Country Gentleman.
Farm Poultry.
Garden and Forest.
Irrigation Age.
Journal of Horticulture.
Pacific Rural Press.
Poultry World.

NEWSPAPERS AND MISCELLANEOUS PERIODICALS.

The following is a list of periodicals received at the Experiment Station library, through the courtesy and liberality of the publishers, in exchange for the publications of the Station. Free access to these and other publications is allowed to college students and to the general public. The list comprises nearly all the best agricultural papers of the country, and in connection with the college list of periodicals, constitutes an excellent current library of agriculture and related sciences.

Agricultural Epitomist.
Agriculturist.
American Agriculturist, Middle and Western editions.
American Creamery.
American Cultivator.
American Fertilizer.
American Gardening.
American Grange Bulletin.
American Horticulturist.
American Sheep Breeder and Wool Grower.
American Swineherd.
Baltimore Weekly Sun.
Bell's Weekly Messenger.
California Cultivator and Poultry Keeper.
California Fruit Grower.
Chronique Agricole, Lausanne, Switzerland.
Church and Farm.
Indiana Farmer.
Industrial American.
Industrialist.
Irrigation Age.
Journal of Board of Agriculture, London, England.
Journal of Agriculture.
Jersey Bulletin.
Kansas Farmer.
Live Stock Indicator.
Live Stock Report.
L'Industrie Laitiere, Paris, France.
Louisiana Planter.
Milch Zeitung, Bremen, Germany.
Mirror and Farmer.
Montana Fruit Grower.
Nebraska Farmer.
Neue Zeitschrift fur Rubenzucker-Industrie, Berlin, Germany.

Clover Leaf.
Colman's Rural World.
Commercial Agriculture.
Connecticut Farmer.
Creamery Journal.
Cultivator.
Daily Public Ledger, Philadelphia.
Dairy The, London, England.
Dairy World.
Dakota Farmer.
Elgin Dairy Report.
Farmers' Advocate.
Farm, Field, and Fireside.
Farm and Fireside.
Farmers' Guide.
Farm and Home.
Farmer's Home.
Farm Journal.
Farmer's Call.
Farmer's Magazine.
Farming, Toronto, Ont., Canada.
Farm News.
Farm and Orchard.
Farmers' Review.
Farm, Stock, and Home.
Field and Farm.
Gardening.
Grange Visitor.
Hoard's Dairyman.
Holstein Friesian Register.
Hospodar.
New England Farmer.
New England Florist.
Ohio Farmer.
Orange Judd Farmer.
Pacific Coast Dairyman.
Practical Farmer.
Prarie Farmer.
Revue Internationale des Falsifications, Amsterdam, Holland.
Rocky Mountain Agriculturalist.
Rural Canadian, Toronto, Ont., Canada.
Rural Life.
Rural Northwest.
Scottish Farmer, Glasgow, Scotland.
Southern Cultivator.
Stockman and Farmer.
Successful Farmer.
Sugar Beet.
Texas Farm and Ranch.
Ulster Agriculturist. Belfast, Ireland.
Wallace's Farmer.
Weekly Call, San Francisco.
Weekly Tribune, New York.
Western Agriculturist and Live Stock Journal.
Western Rural.
Wisconsin Agriculturist.
Wool, Mutton, and Pork.
World, thrice a week.

The following Utah newspapers are also sent by the courtesy of the publishers:

Advocate, Price.
Advocate, Richfield.
American, Spanish Fork.
Argus, Salt Lake City.
Banner, Lehi.
Beobachter, Salt Lake City.
Blade, Deseret.
Box Elder News, Brigham.
Item, American Fork.
Journal, Logan.
Mercury, Mercur.
Messenger, Manti.
Miner, Tintic.
News, Beaver.
Press, Ogden.
Progress, Fillmore.

Bugler, Brigham.
Bulletin, Bingham.
Clipper, Farmington.
Democrat, Eureka.
Deseret News, Salt Lake City.
Dispatch, Provo.
Enterprise, Ephraim.
Enquirer, Provo.
Express, Vernal.
Globe, Payson.
Herald, Salt Lake City.
Independent, Sandy.
Independent, Springfield.
Inter Mountain Advocate, Salt Lake City.
Pyramid, Mount Pleasant.
Record, Cedar City.
Record, Park City.
Republic, Nephi.
Republican, Logan.
Review, Ogden.
Sentinel, Manti.
Southern Censor, Richfield.
Standard, Ogden.
Times, Coalville.
Transcript, Tooele.
Tribune, Salt Lake City.
Utah Patriot, Park City.
Utonian, Provo.
Wasatch Wave, Heber.
Woman's Exponent.

BOARDING HOUSE.

The College Boarding House will be under the supervision of Mrs. J. M. Tanner, and students will be directly responsible to the President of the College for their conduct. Two students usually occupy one room, the cost to each for rent, electric light and board being from $2.50 to $3.25 a week. Students are required to furnish bedding and carpet.

WEATHER FORECASTS.

The Experiment Station receives the telegraphic weather forecasts from the forecast official of the Department of Agriculture located at San Francisco. The forecasts are telegraphed each day (Sundays and holidays excepted) at government expense. The signal flags are displayed from the flagpole of the College in full view of the valley below. These forecasts or warnings are of great value to the farming community. In 1893 the per centage of verification of the forecasts for the Pacific Coast division was 83.7. For Utah, which is part of this division, the per centage was

likewise 83.7. Great value is placed upon these forecasts by the Department of Agriculture at Washington. From their timely warnings much property is saved both on sea and land. The Department considers that $10,000,000 is a conservative estimate of the value of property saved in 1895. Doubtless some means will be devised in the near future whereby these forecasts will be made more accessible to the farming community. An explanation of the flag signals is shown on the last page.

STUDENTS.

GRADUATES, 1896

WITH THE DEGREE OF BACHELOR OF SCIENCE:

Langton, Willard S,	Logan
Larsen, Christian	"
McLaughlin, Walter W	"
Merrill, Amos N	Richmond
Merrill, Lorin A	"
Rhead, Josiah L	Coveville
Thomson, Joseph R	Richmond

WITH CERTIFICATES FOR THE COMPLETION OF THE SHORT COMMERCIAL COURSE:

Carver, Lewis H	Plain City
Gibson, Wesley	Smithfield

SENIORS.

Larsen, Christian	Logan
McLaughlin, Walter W	"
Merrill, Amos N	Richmond
Merrill, Lorin A	"
Rhead, Josiah L	Coveville
Thomson, Joseph R	Richmond

JUNIORS.

Anderson, John A	Ephraim

Bankhead, John	~~Wellsville~~
Barker, Olla	Ogden
Barrett, Arthur C	Logan
Harris, Joel Judkins	Ogden
Hart, Alfred Augustus	Thomas Fork, Idaho
Hart, Hermoine	" " "
Humphreys, Thomas Hyrum	~~Paris~~, "
Jensen, Charles A	~~Hyrum~~
Maughan, Rachel	~~Petersboro~~
Mendenhall, John Fenmore	Springville
Pond, Charles	Lewiston
Smith, Mamie	Preston, Idaho
Sponberg, Anna	Franklin, "
Stewart, John	~~Plain City~~

SOPHOMORES.

Allen, Mary Ida	Logan
Anderson, Mamie	"
Atkinson, Frederick Henry	Dayton, Idaho
Baker, John Simon	Mendon
Beers, Annie	~~Logan~~
Beers, William Duke	
Bullen, Mable	Richmond
Bybee, Mary Jane	Lewiston
Carver, Lewis Henry	Plain City
Eames, Ezra	Logan
Fernette, Frank	Park City
Gibson, Wesley	Smithfield
Hansen, N	Logan
Hatch, Vivian E	Ogden
Hendricks, George Gideon	Richmond
Irvine, Alexander Ray	Logan
Peterson, Joseph H	Huntsville
Peterson, William	Bloomington, Idaho
Smith, Parley	Dewiston
Tarbet, Annie	Logan
Toolson, George A	Smithfield

FRESHMEN.

Andrus, Alexander B ..... St. George
Andrus, Gideon La Fayette ..... "
Benedict, Beatrice ..... Logan
Bernhisel, Annie ..... Lewiston
Brossard, Louis Alphonse ..... Oxford, Idaho
Budge, Frank ..... Paris, "
Bullen, Ethel ..... Richmond
Cannon, Mark ..... Salt Lake City
Chambers, Thomas Henry ..... Smithfield
Christensen, Moses ..... Newton
Christian, Guy ..... Beaver
Condon, Leslie Guy ..... Park City
Curtis, Harry Benson ..... Blackfoot, Idaho
Dalton, Marion ..... Willard
Davenport, Helen ..... Wood River, Oregon
Evans, Frederick Charles ..... Thomas Fork, Idaho
Evans, Joseph Alvan ..... " " "
Fjelstead, Estella ..... Logan
Funk, James William ..... Richmond
Gee, William Erastus ..... Lewiston
Geertson, Leonora ..... Salmon City, Idaho
Geertson, Lillian ..... " " "
Gordon, Robert John ..... Meadowville
Gibson, Ella Edna ..... Smithfield
Griffin, Ute Elon ..... Richmond
Hanson, August J ..... Logan
Hanson, Peter C ..... Soda Springs, Idaho
Hart, James Richard ..... Thomas Fork, Idaho
Hayball, George Ole ..... Logan
Hendricks, Maria Elizabeth ..... Richmond
Hess, John Alma ..... Georgetown, Idaho
Hoff, Beatrice ..... " "
Hoganson, Christian ..... Newton
Hoggan, George Walter ..... Providence
Holbrook, Brigham S ..... Bountiful
Homer, Rose ..... Oxford, Idaho
Homer, William Harrison ..... "

Humphreys, Charles Richard ..... Paris, Idaho
Huntsman, Sarah ..... Wellsville
Jensen, Anton Ephraim ..... Mantua
Jensen, Joseph William ..... Newton
Jorgenson, Moses ..... Logan
Larsen, Eliza ..... Collinston
Larsen, Joseph J ..... Newton
Lovegren, Carrie ..... Mount Pleasant
McAlister, Will Lucius ..... Logan
Martineau, Theodore ..... Juarez, Mexico
Maughan, Elizabeth ..... Peterboro
Merrill, Fred Whittemore ..... Richmond
Merrill, Lucile Elcina ..... "
Miner, Idaliah ..... Logan
Mitchener, Myrtie ..... Stockton
Moffat, Enid ..... Salt Lake City
Molen, William ..... Menan, Idaho
Morrell, Joseph Rowland ..... Logan
Nelson, Frank Orlando ..... Richmond
Nelson, Olaf Andrews ..... Logan
Nibley, Alexander ..... Baker City, Oregon
Peterson, Carrie Amelia ..... Ephraim
Porter, Moses Ensign ..... Riverside
Rager, William Henry ..... Thistle
Redford, Abraham B ..... Beaver
Rice, Nana ..... Logan
Roberts, Edgar Thomas ..... Afton, Wyoming
Roberts, John James ..... Paradise
Simmonds, William Walter ..... Trenton
Skeen, Jedediah ..... Plain City
Smith, Absalom Carlos ..... Lewiston
Sorenson, Theona ..... Huntsville
Sparks, Edward Hamilton ..... Nephi
Spencer, Leonora ..... Paris, Idaho
Staker, Edmund Merchant ..... Rockport
Stocks, James Halley ..... Lewiston
Stover, Arthur Patterson ..... Logan
Tarbet, Willard Davis ..... "

Taylor, George Francis.....Plain City
Thatcher, Ollie.....Logan
Thatcher, Roy Davis..... "
Thomas, James, Clabourne ~~Bloomington, Idaho~~ Salt Lake city
Turner, Amos Howarth.....Murray
Watson, William.....Logan
Webb, William.....Fillmore
Wheatley, Edvin Calvin.....Honeyville
Williamson, Orson.....St. Charles, Idaho
Woodward, Jennie..... Franklin, "
Woozley, Pearl..... Malad, "
Wright, Measie.....Nephi

SUB-FRESHMEN.

Allen, Elijah W.....Coveville
Allen, William Arthur..... Lewiston
Aller, Leslie.....Lewiston
Anderson, Francis Edward.....Salt Lake City
Anderson George Albert.....Logan
Anderson, Niels Peter..... "
Andrews, David..... "
Andrews, Thamizon..... St. George
Archibald, Charles S.....Clarkston
Ash, Joseph Willard.....Beaver
Austin, Arta Chase.....Liberty, Idaho
Bagley, Pernecy May..... Montpelier, "
Baird, Warner.....Lewiston
Baker, Willard.....Mendon
Ballam, Fred Thomas.....Logan
Ballam, Florence..... "
Ballif, Joseph Fenelon..... "
Barnes, Elias J.....Salt Lake City
Barson, Hyrum.....Clarkston
Barson, Denny B..... "
Barson, May Eliza..... "
Bateman, George F.....Bloomington, Idaho
Beck, Samuel.....Salt Lake City

Beckstead, Gordon Eli ..... Oxford, Idaho
Beckstead, Samuel Leonidas ..... " "
Birdneau Leo William ..... Logan
Bindrup, Nephi ..... College Ward
Bithell, Joseph James ..... Salt Lake City
Blythe, Charles ..... " " "
Barker, Amy ..... View
Boyle, Clare Julie ..... Oxford, Idaho
Boyle, Sarah ..... " "
Broberg, John Carl ..... Logan
Brown, James Ferguson, ... Liberty, Idaho
Brown, Julia ..... " "
Brown, Lucy ..... Providence
Buehler, Louisa ..... Logan
Bullen, Pearl ..... Richmond
Bullock, Winnie ..... Providence
Bybee, Harriet Emmaline ..... Lewiston
Byrne, Louis ..... Lyman, Idaho
Campbell, Ezra Taft ..... Providence
Candland, Lawrence H ..... Uintah
Card, Nora ..... La Belle, Idaho
Carlisle, Benjamin ..... Logan
Carlson, Ezra ..... "
Challis, Arthur Daniel ..... Franklin, Idaho
Cheney, Clarence Elijah ..... Laketown
Cheney, Delonza ..... Lewiston
Christian, Marion L ..... Beaver
Christensen, Annie ..... Bear River City
Christensen, Fred ..... Richmond
Christensen, John ..... Ephraim
Christensen, Lina ..... Bear River City
Christensen, Lizzie Carrie ..... Newton
Clark, Israel Justice ..... Benson
Clark, John Edmund ..... "
Clark, Vaughan Howard ..... Salt Lake City
Coleman, Andrew ..... Tooele
Cooley, Marcus Robert ..... Newton
Cooper, Blanche ..... McCammon, Idaho

Cornish, Hattie ..... Coveville
Crandall, William Vernon ..... Oxford, Idaho
Crockett, Ella ..... Logan
Crockett, Fannie ..... "
Crockett, June ..... "
Curtis, Frank ..... "
Curtis, Lillie May ..... "
Dahle, Albert Henry ..... "
Dalton, Guy A ..... Manti
Davenport, Franklin R ..... Wood River, Oregon
Davis, Emma ..... Soda Springs, Idaho
Davis, Lila Ann ..... " " "
Davis, Taylor ..... " " "
Dudley, May Eliza ..... Clifton, "
Duffin, Edward ..... Paris, "
Edlefson, May ..... Logan
Egan, William Fister ..... Bountiful
Eliason, Phoebe ..... Logan
Eliason, William ..... Moroni
Elwell, Isaac Jr., ... Logan
Ericksen, Charles Alfred ..... "
Ewing, Lester ..... Smithfield
Fallon, Louisa Kate ..... Henry's Fork, Wyoming
Farr, Aquilla ..... Logan
Farr, Winslow ..... "
Fife, Finis ..... Providence
Gibbons, Ann Elizabeth ..... Garden City
Gibbons, Joseph Weston ..... " "
Gleason, Alvonis Horace ..... Garland
Gleason, Meady ..... Sunset
Goldberg, Orson S ..... Paradise
Gorton, Henry Clay ..... Soda Springs, Idaho
Greaves, Elizabeth ..... Ephraim
Hanks, Frank Henry ..... Logan
Hansen, Charles Willard ..... Logan
Hansen, Hans C ..... Logan
Hansen, Christian James ..... "
Hansen, James Edward ..... Providence

Hansen, Joseph Henry ..... Logan
Hansen, Nephi Peter Niels ..... Newton
Hansen, Selma Hortense ..... Smithfield
Hansen, William ..... Clarkston
Harris, Carrie ..... Beaver, Idaho
Harris, Emma ..... Richmond
Hartvigsen, Annie ..... Hyrum
Henderson, Mamie ..... Oneida, Idaho
Hendricks, John William ..... Richmond
Hendricks, William Warren ..... "
Herd, James ..... Franklin, Idaho
Hill, Harriett ..... Rexburg, "
Hodge, Elizabeth ..... Paris, "
Hogensen, Stena ..... Newton
Hoggan, Geo. R. ..... Manti
Holladay, Lucy Ann ..... Smithfield
Holmes, Thomas Henry ..... Murray
Homer, Ida May ..... Oxford, Idaho
Horsley, Fiby ..... Soda Springs, "
Horsley, Harry ..... " " "
Hutteballe, Hans Christian ..... Logan
Izatt, Jeannette ..... "
Jacobson, Alma Gustave ..... "
Jacobson, Carl Aaron ..... "
Jenkins, Lewis ..... Newton
Jenkins, Ruth ..... "
Jensen, Anton ..... Mantua
Jensen, Anton Henry ..... Preston, Idaho
Jensen, James P ..... Bear River City
Jensen, John Henry ..... St. Charles, Idaho
Jensen, Matilda ..... Logan
Jensen, Minnie ..... Newton
Jensen, Peter Simon ..... Preston, Idaho
Jensen, William ..... Mantua
Johnson, John Alma ..... Logan
Jones, James Thomas ..... Malad, Idaho
Jones, Mary Ann ..... Logan
Jones, Thomas Daniel ..... Malad, Idaho

Kent, Lillie Maud ..... Logan
Kirkwood, Fred ..... Provo
Knowles, Ernest ..... Logan
Krogue, Gertrude Emily ..... Bloomington, Idaho
Krogue, Nelson Louis ..... " "
Larsen, Andrew N ..... Logan
Larsen, Christian ..... "
Larsen, Christian Albert ..... "
Larsen, David ..... Collinston
Larsen, John Christian ..... Coveville
Larsen, John Willard ..... Collinston
Larsen, Lorenzo Wiilliam ..... Preston, Idaho
Larsen, Mary A ..... Newton
Larsen, Nellie ..... Logan
Larsen, Nettie ..... "
Larsen, Retta M ..... Newton
Larson, Hulda ..... Logan
Leavitt, Edward ..... Lewiston
Leichter, John Adam ..... Park City
Lundsteen, Niels ..... Levan
Madson, Victor Emanuel ..... Brigham City
Marler, Lorin William ..... Lewiston
Marler, May Amanda ..... "
Mathews, Hopkins Charles ..... Providence
Mathis, James Samuel ..... Harmony
Mathis, John Arnold ..... "
Matson, Amanda Christine ..... Logan
May, Richard Charles ..... Calls Fort
McAlister, Maima ..... Logan
McGarry, James ..... Beaver
McGowan, George Leonard ..... Challis
McNiel, Ellen ..... Logan
Medford, John Freeman ..... Gentile Valley, Idaho
Merrell, John Francis ..... Brigham City
Merrill, Mary Jane ..... Bermington, Idaho
Merrill, Owin Preston ..... Franklin, "
Miles, George Edwin ..... Smithfield
Mitchell, Alfred Hezekiah ..... Logan

Morehead, Junie Harrison ..... Smithfield
Morgan, George Lester ..... Paris, Idaho
Morgan, John Richard ..... Willard
Morgan, Pauline ..... "
Morgan, Robert Henry ..... "
Morgan, Samuel Perry ..... Franklin, Idaho
Mortenson, Joseph ..... Brigham City
Moss, Alexander ..... Bountiful
Mulkey, Marion ..... Salmon, Idaho
Naef, Elsie ..... Providence
Napper, Charles Edward ..... Logan
Needham, Sylvan Eugene ..... "
Neely, Parley Hughes ..... Kamas
Neilson, Neils Peter ..... Logan
Nelson, Joseph ..... Mantua
Nelson, William ..... Newton
Newman, Stephen Bird ..... Salt Lake City
Nibley, Osmond ..... Baker City, Oregon
Nilson, Ella ..... Smithfield
Oakden, Clarence ..... St. Anthony, Idaho
Olsen, Alma ..... Newton
Olsen, Henry Christian ..... Logan
Olsen, Charles Peter ..... "
Ormsby, Mable Jane ..... "
Orr, Joseph ..... Liberty, Idaho
Ottoson, Nephi ..... Manti
Packer, Edson Whipple ..... Riverside, Idaho
Paine, Vennettia ..... Georgetown, "
Palmer, Centennial Edward ..... Plain City
Parker, David ..... St. Anthony, Idaho
Parkinson, Elizabeth ..... Logan
Parkinson, William Brigham, Jr ..... "
Paull, Charlotte E ..... "
Paull, Gertrude ..... "
Pearce, Charles William ..... Paradise
Pedersen, Antone ..... Provo
Peterson, Andrew ..... Logan
Peterson, Andrew ..... Manti

Peterson, Charles Peter ..... Richfield
Peterson, Edward Larsen ..... Petersboro
Petty, Martha Jane ..... Richmond
Petty, William Henry ..... "
Philips, Josephine Maude ..... Morgan
Picore, Frank ..... Snowville
Porter, Florence ..... Logan
Powers, Alice Diantha ..... Smithfield
Pugmire, Leroy ..... St. Charles, Idaho
Quayle, Nellie ..... Montpelier, "
Ralph, Fred Charles ..... Hyrum
Redd, Fanzine Ellen ..... New Harmony
Redd, Mary Catherine ..... Harmony
Redford, John ..... Beaver Canyon, Idaho
Rice, Arvin R ..... Egin, "
Rice, Margaret ..... Providence
Richardson, Susan Eliza ..... Smithfield
Ricks. Harvey ..... Logan
Ririe, Joseph ..... Eden
Robinson, Frank ..... Richmond
Robinson, George ..... Franklin, Idaho
Rogers, Samuel Russell ..... Lewiston
Rowe, Lorenzo William ..... Salt Lake City
Rowlins, Alfonso ..... Lewiston
Saucier, Fred Ervin ..... Salt Lake City
Savage, Ray T ..... " " "
Schuler, Emil ..... " " "
Sermon, John Atwood ..... Murray
Shipley, Orren Smith ..... Paradise
Shrives, Harry Edwin ..... Franklin, Idaho
Slater, James Roy ..... Slaterville
Smith, Anna Elaine ..... Providence
Smith, Cuzandra ..... Smithfield
Smith, David ..... Logan
Smith, Ephraim ..... Sandy
Smith, Isaac S ..... Logan
Smith, Marie Jane ..... Lewiston
Smith, Sylvia ..... Smithfield

Sorenson, Alice Jennette ..... Georgetown, Idaho
Spahn, Carl ..... Salmon City, "
Spencer, George Boardman Jr ..... Paris "
Spencer, Joseph Horne ..... Paris, Idaho
Steed, Albert Arthur ..... Ogden
Stephens, Thomas Nephi ..... Bennington, Idaho
Stevens, Leroy Alfred ..... Holden
Stewart, Carrie Julia ..... Logan
Stewart, Ida May ..... "
Stoddard, Jessie ..... "
Stowell, W. B ..... "
Sutton, Ernest ..... Salt Lake City
Sutton, Margaret ..... Paris, Idaho
Sweeten, Robert ..... Mendon
Taggart, Frederick ..... Morgan
Taylor, Frank William ..... Willard
Telford, John ..... Richmond
Tenny, Levi Stewart ..... Colonia Diaz, Mexico
Tenny, Phoebe ..... " " "
Terry, Dora Marie ..... Richmond
Thatcher, Aaron D ..... Logan
Thatcher, Frank Davis ..... "
Thatcher, Orson Pratt ..... "
Thatcher, Preston ..... "
Thomas, Burton Lewis ..... Bloomington, Idaho
Thomas, Fenretta ..... Smithfield
Thomas, Howard Lafayette ..... "
Thomas, John Owens ..... Malad, Idaho
Thomas, Joseph Richard ..... Richmond
Theurer, Ettie ..... Providence
Tippets, Abigail Eliza ..... Bennington, Idaho
Titensor, Rosa ..... Coveville
Toolson, George A ..... Smithfield
Trumbull, Thomas O ..... Custer, Idaho
Turner, Charles Henry ..... Farmington
Turner, Fred H ..... Logan
Turner, Mary Ann ..... Logan
Van Leuven, Lucinda ..... Fairview, Idaho

Van Leuven, Nellie ..... Lewiston
Waddoups, Thomas Anson ..... Bountiful
Waite, William ..... "
Walworth, James Thomas ..... Snowville
Ward, Rachel Adeline ..... Willard
Warner, William David ..... Uintah
Watson, Alma Grant ..... Bingham Canyon
Welker. Clara ..... Bennington, Idaho
Wendleboe, Violet Dorthea ..... Logan
Weston, Sarah ..... Laketown
Wheatley, John Gibbs ..... Honeyville
Whitaker, Edmund ..... Centerville
Wilbur, Jesse M ..... Eden
Wilbur, O. K ..... Eden
Wilkins, George Edgar ..... Peoa
Wilson, Amy Elizabeth ..... Logan
Wilson, C. C ..... Beaver City
Wilson, Richard H ..... Eden
Wiscom, Orson Charles ..... Liberty, Idaho
Woolf, Clare ..... Mount Sterling
Worsdell, Archibald ..... Logan
Wright, Reginald ..... Ogden
Young, Cora ..... Salt Lake City
Young, James Taylor ..... Salt Lake City
Young, Wilford Vancott ..... Salt Lake City

SPECIAL STUDENTS.

Cafferty, Carrie ..... Logan
Cheney, Frank ..... Brigham
Clemens, Alice Isabella ..... Logan
Fjelstead, Annie ..... Logan
Flueckiger, Mary Eliza ..... Providence
Foss, Ezra Carter Jr ..... Logan
Hansen, Niels Peter ..... Logan
Hanson, George David ..... Providence
Hardy, Edward Augustus ..... Fielding
Hubbard, Jennie ..... Logan
Hyde, Emma Loraine ..... Logan

Izatt, Jeanette W ..... Logan
Katsunuma, Tomizo J ..... Tokio, Japan
Kearl, Alfred ..... Laketown
Kilgore, Dora ..... Logan
Kirkbride, James William ..... Smithfield
Larsen, Nephi A ..... Preston, Idaho
Larsen, Noah ..... College Ward
Lewis, Mary ..... Logan
Lloyd Annie ..... Logan
Macfarlane, John M ..... St. George
McLean, Andrew ..... Park City
Medford, Albert ..... Gentile Valley, Idaho
Nuhn, Vilate ..... Willard
Olsen, Peter ..... Logan
Robinson, John Edward ..... Franklin, Idaho
Rosengren, John H ..... Logan
Scoles, Marian ..... "
Smith, Mary S ..... "
Stewart, Isaac ..... "
Widtsoe, Osborne ..... "

WINTER AGRICULTURAL COURSE.

Bell, George A ..... Logan
Carver, Albert J ..... Eden
Griffin, Walter ..... Newton, Idaho
Hansen, Willard ..... Collinston
Johnson, Cenus ..... Newton
Lafount, Harold ..... Logan
Larsen, Joseph ..... Newton
Ormiston, Robert ..... Logan
Peterson, Sern ..... Newton
Scott, W. R ..... Sandy
Sessions, Perry G ..... Logan
Sessions, Scott H ..... "
Snook, John ..... Salmon City, Idaho
Wood, James ..... Logan

WINTER DOMESTIC ARTS COURSE.

Anderson, Della	Grantsville
Batt, Eliza	Logan
Benson, Louise	"
Hansen, Emma	"
Hansen, Mary	"
Harding, Fanny Janet	Fielding
Hatch, Della	Franklln, Idaho
Hobbs, Mabel	" "
Hobbs, Rosa	" "
Kent, Mary	Logan
Langton, Nellie	"
Larsen, Victoria	Collinston
Schaub, Annie J	Logan
Thatcher, Harriet P	Logan

SUMMARY.

Seniors	6
Juniors	15
Sophomores	21
Freshmen	87
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TOTAL	497

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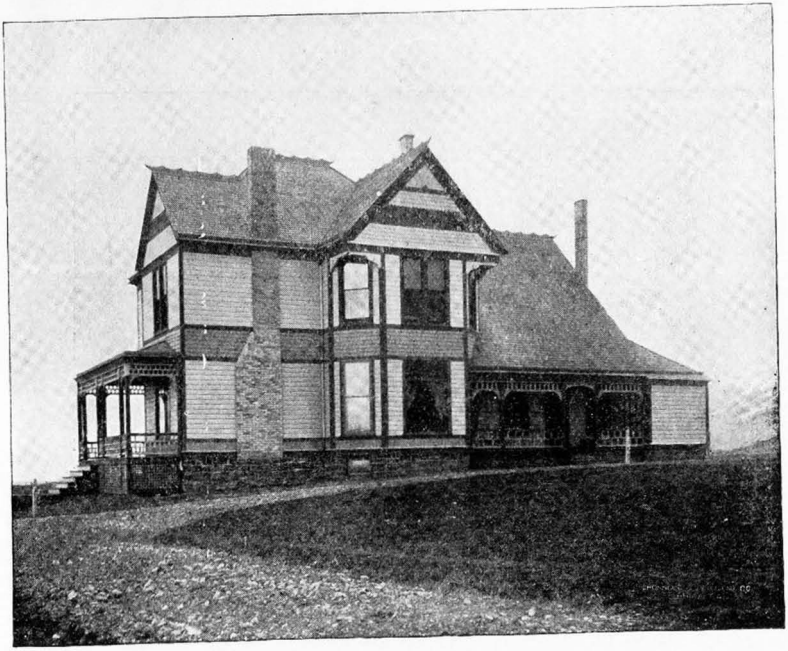

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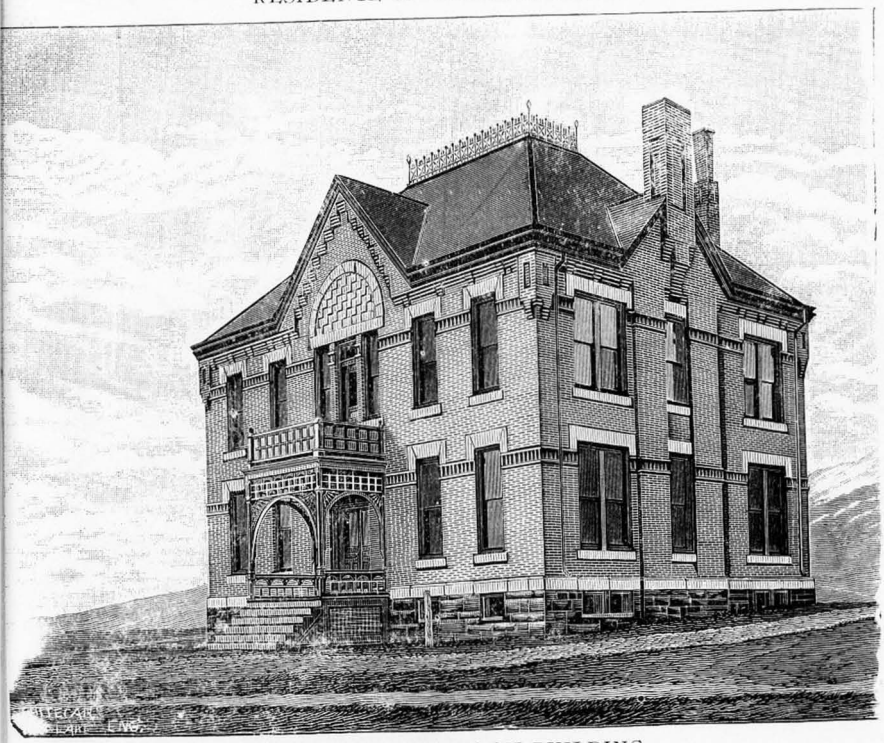
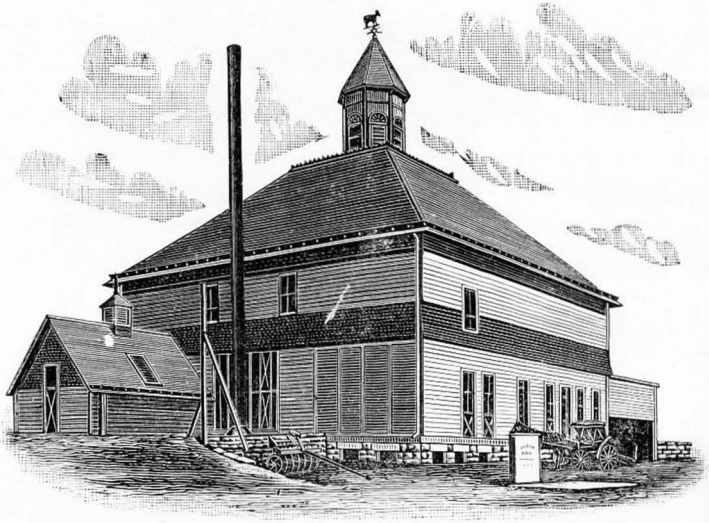


EXPERIMENT STATION BUILDING.

BOARDING HOUSE.



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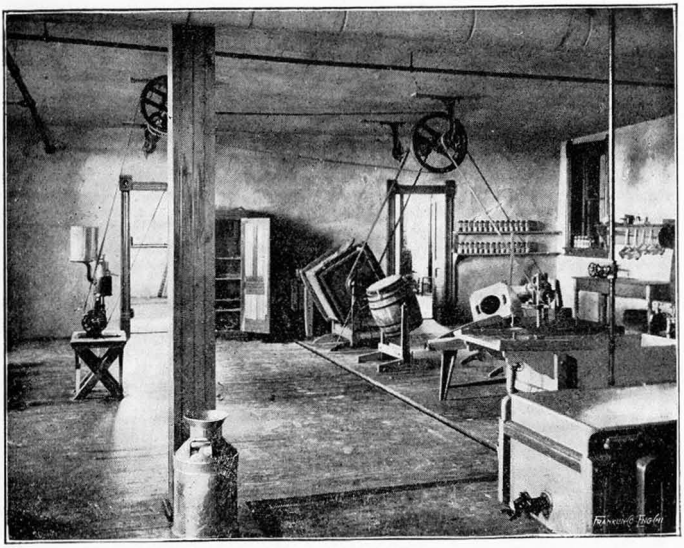

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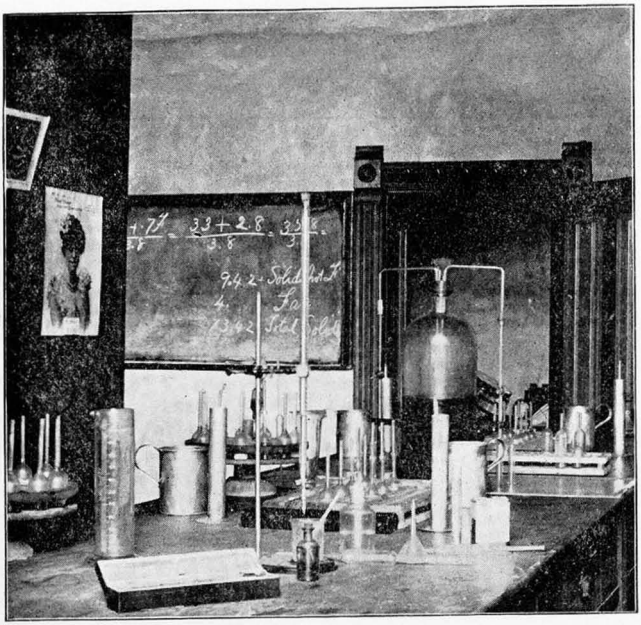
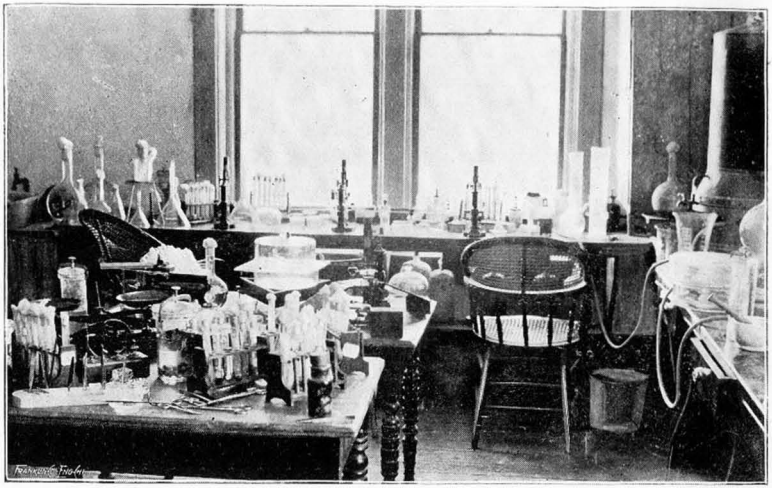
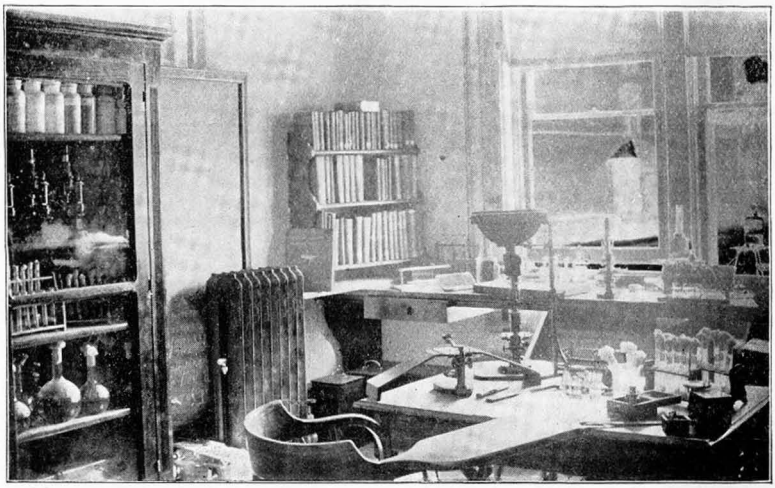


MILK TESTING ROOM.



BIOLOGICAL LABORATORY.



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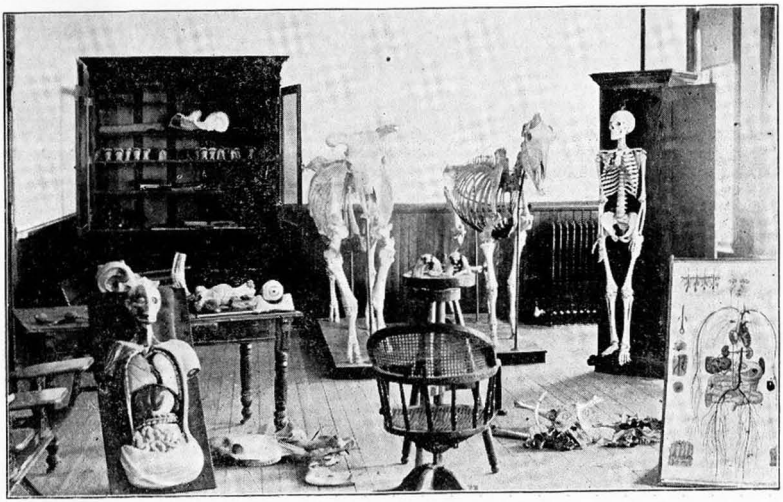

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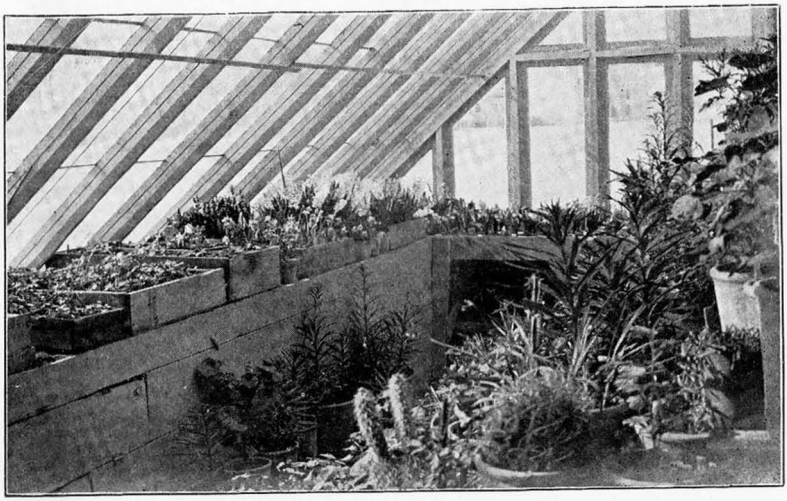
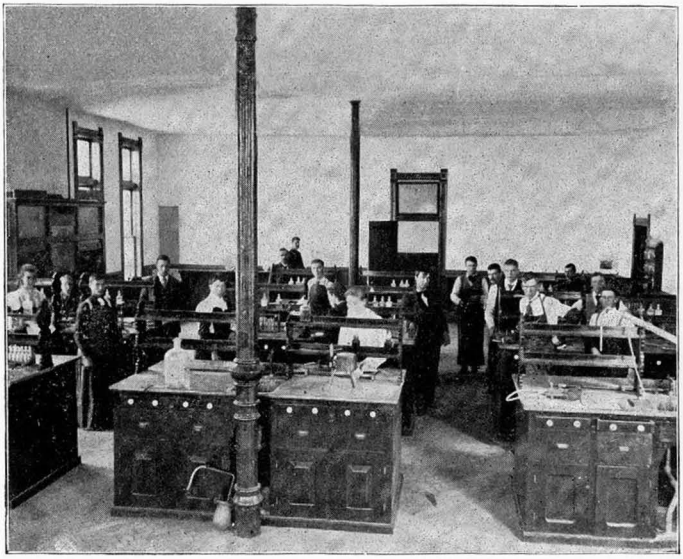


INTERIOR OF GREEN HOUSE.



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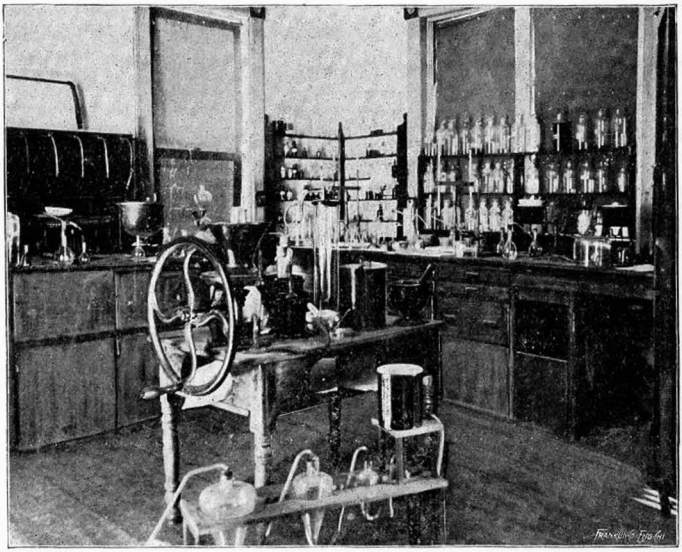

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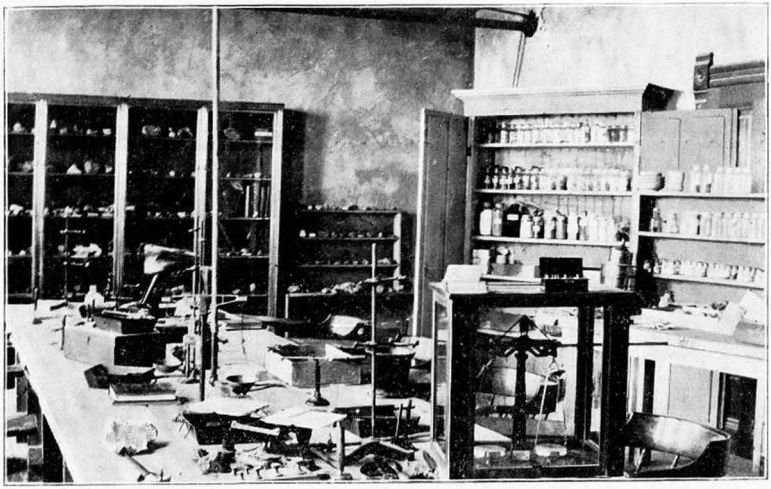

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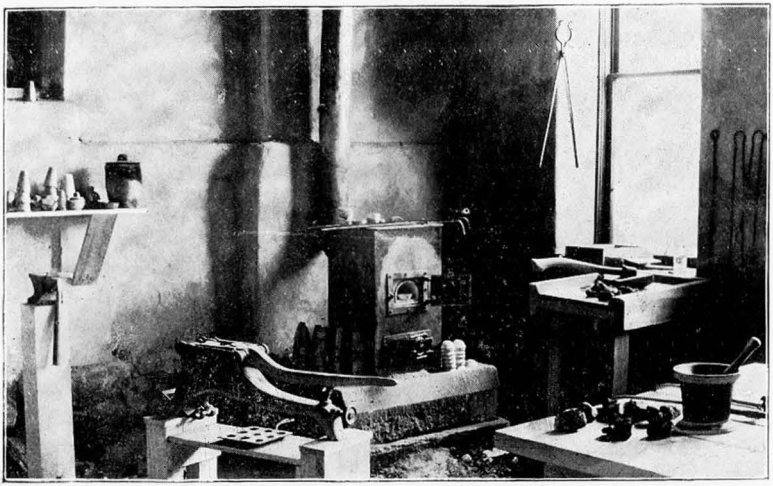
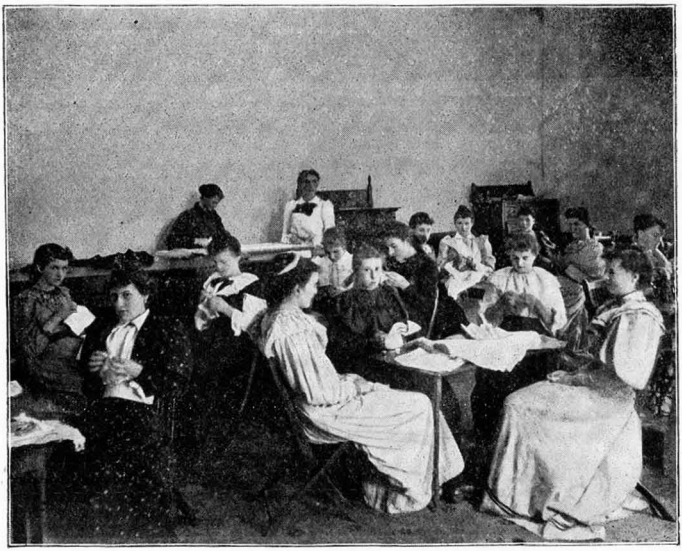
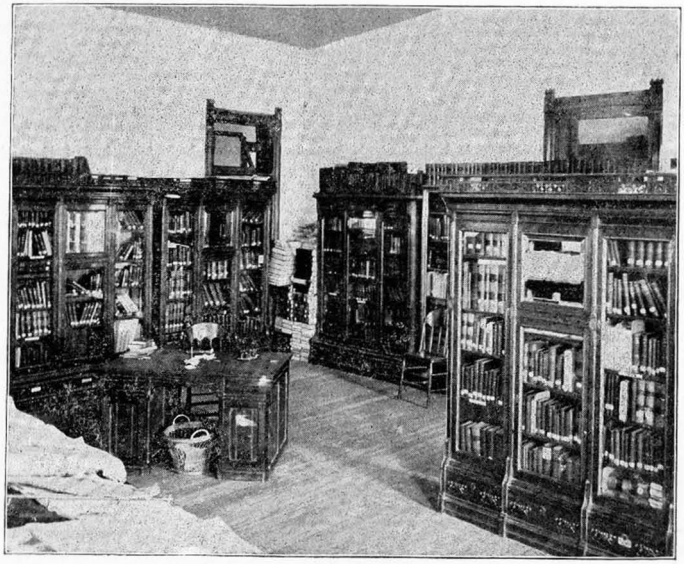


ASSAYING ROOM.

KITCHEN.



SEWING ROOM.



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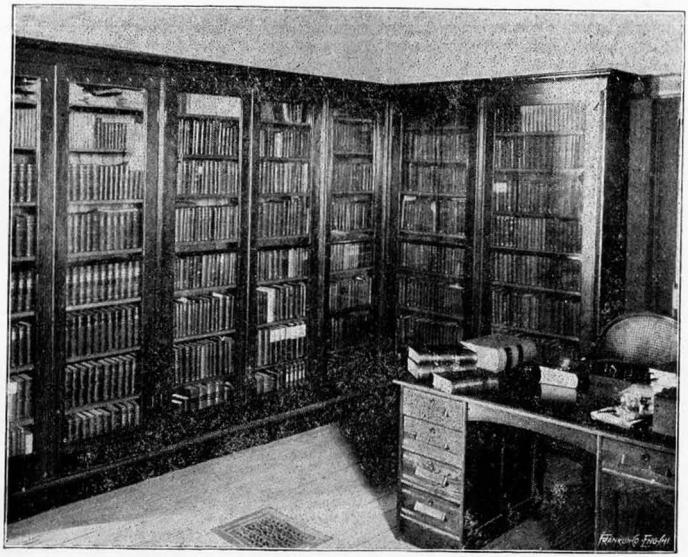

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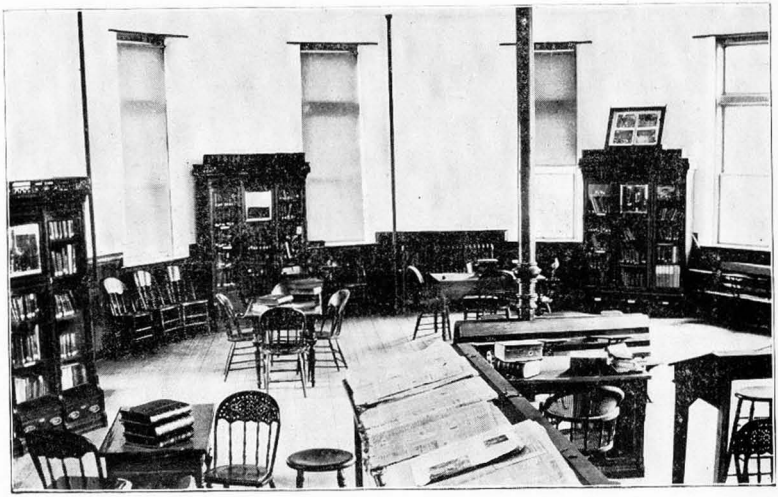
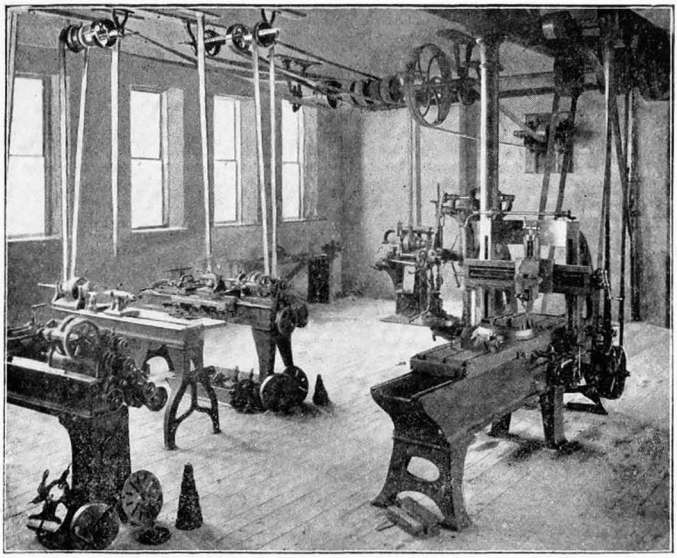
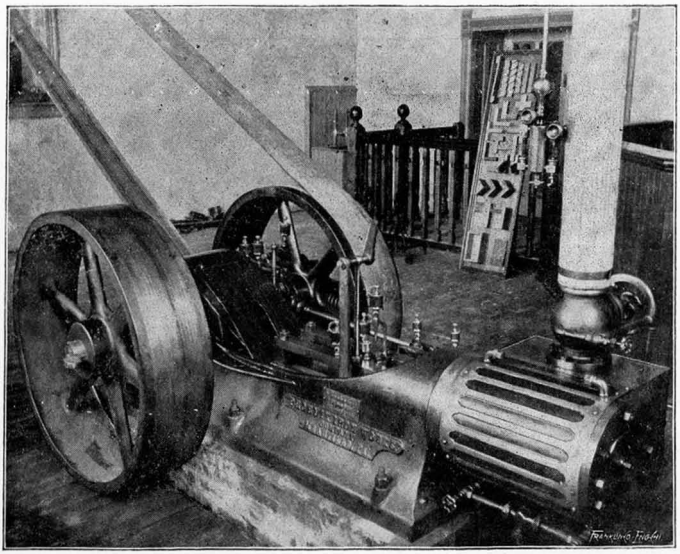


READING ROOM.

PRESIDENT'S OFFICE.



MACHINE SHOP.



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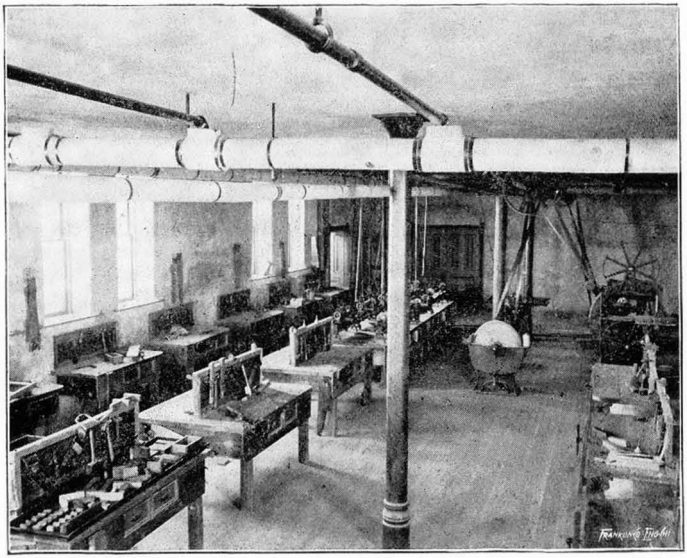

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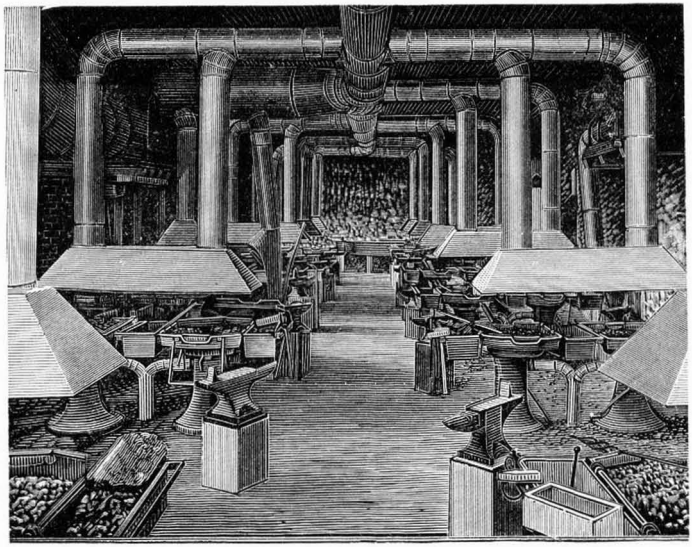
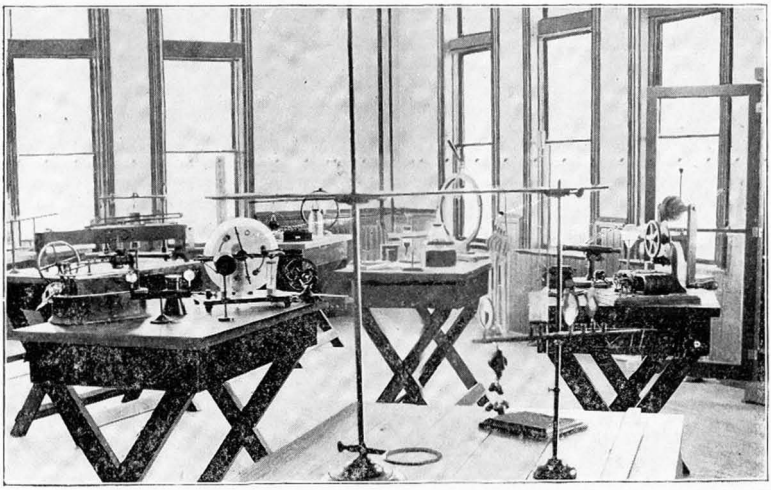
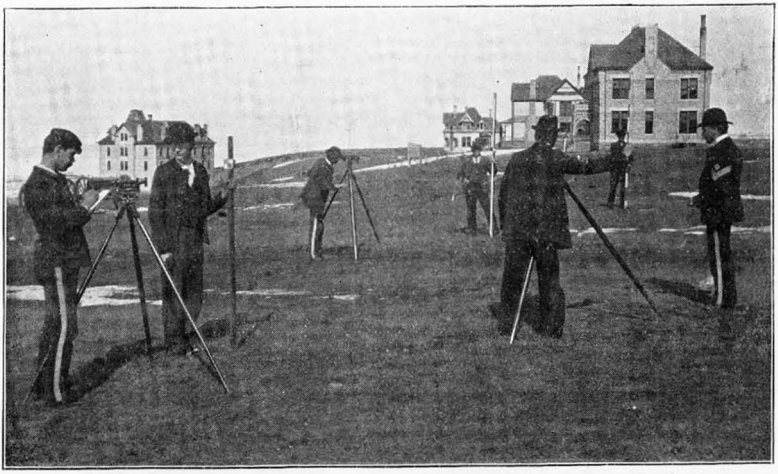


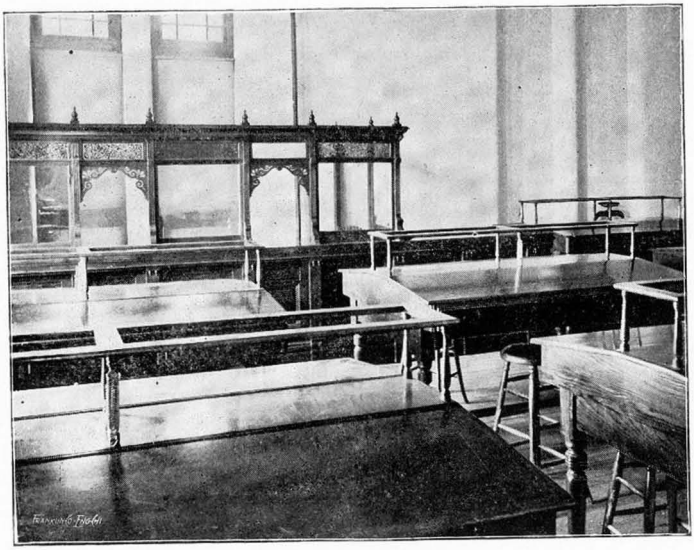
BLACKSMITH SHOP.



PHYSICAL LABORATORY.

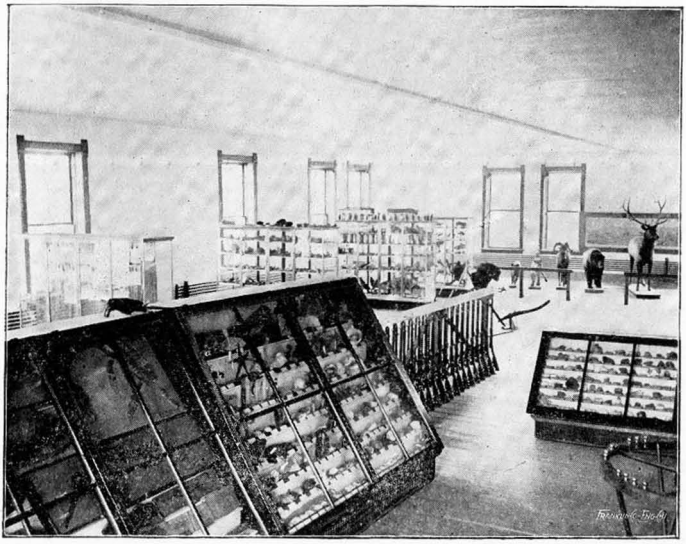


FIELD WORK IN SURVEYING.

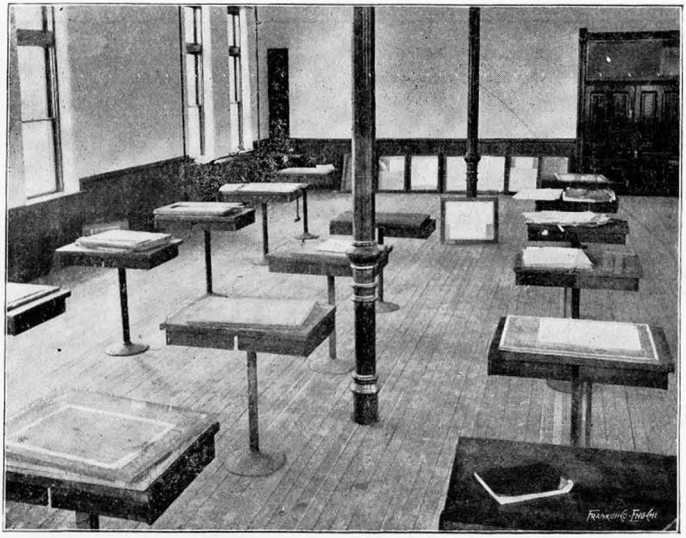


COMMERCIAL ROOM.

TYPEWRITING AND STENOGRAPHY.

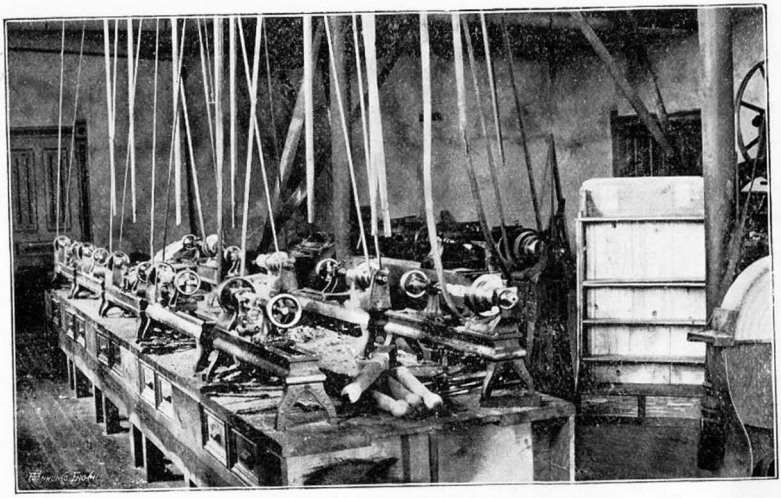


MUSEUM.



MECHANICAL DRAWING ROOM.

SAMPLES OF WOOD WORK.



WOOD TURNING SHOP.