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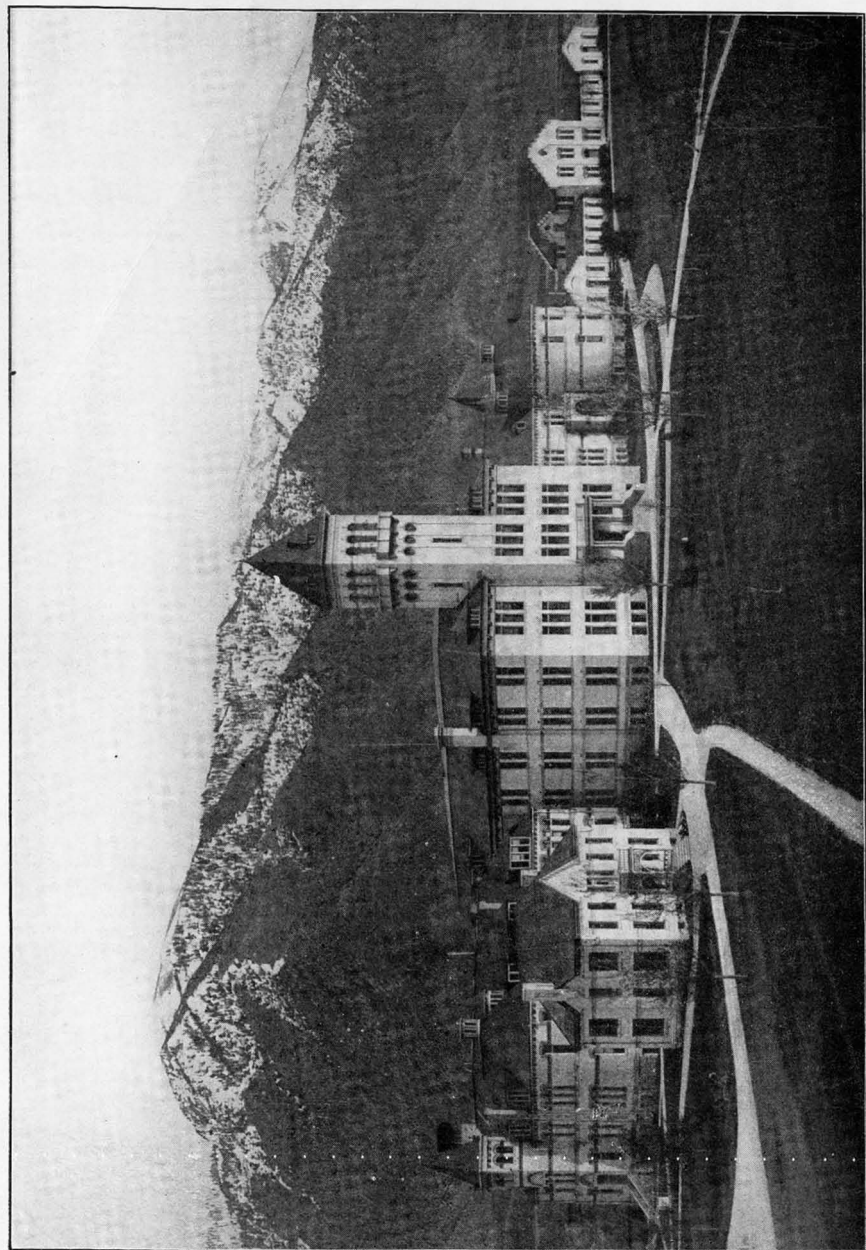


CATALOGUE
OF THE
AGRICULTURAL COLLEGE
OF UTAH
FOR
1904-1905.

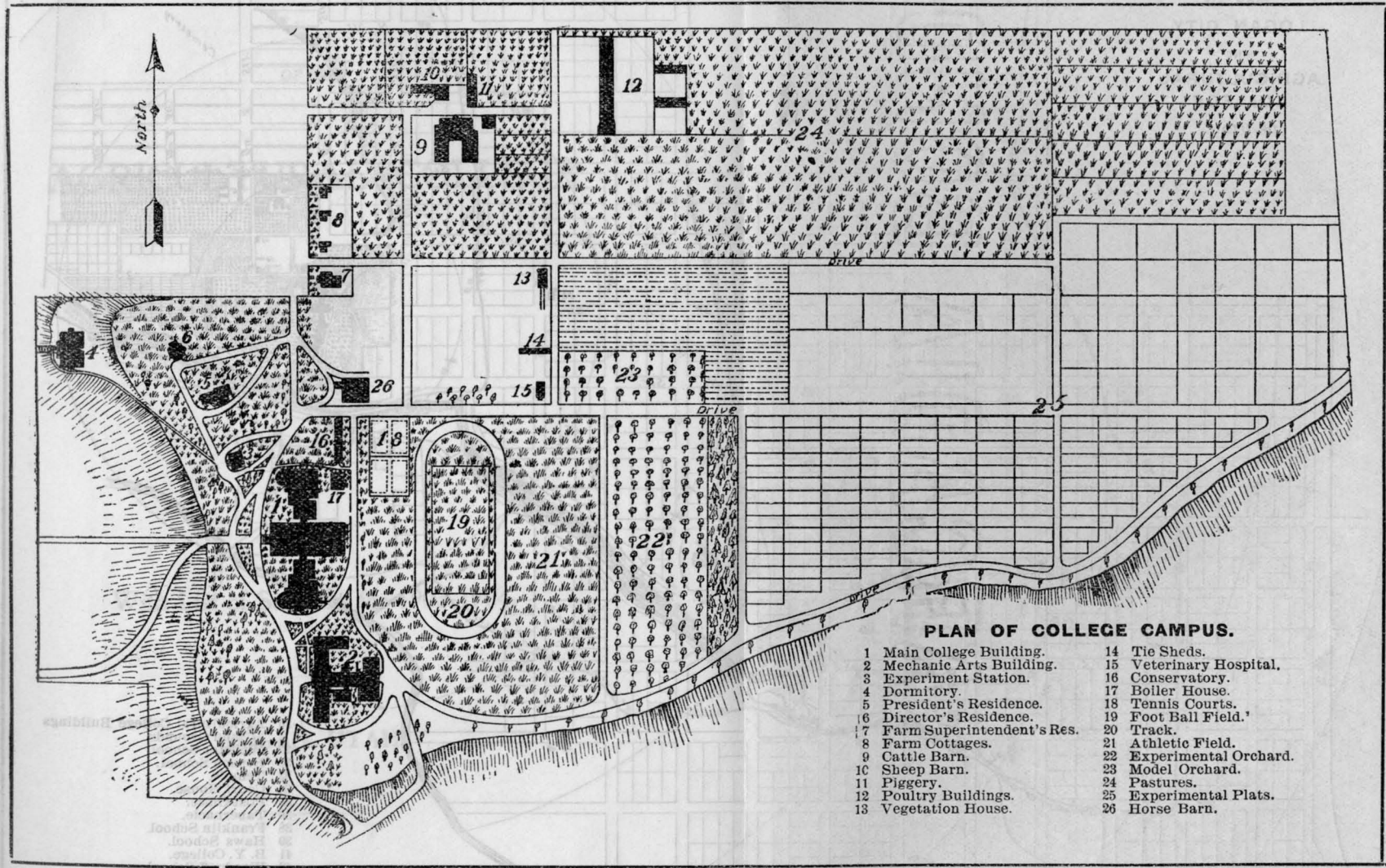
With List of Students for 1903-1904.

LOGAN, UTAH.

Published by the College
July, 1904.



GROUP OF AGRICULTURAL COLLEGE BUILDINGS.

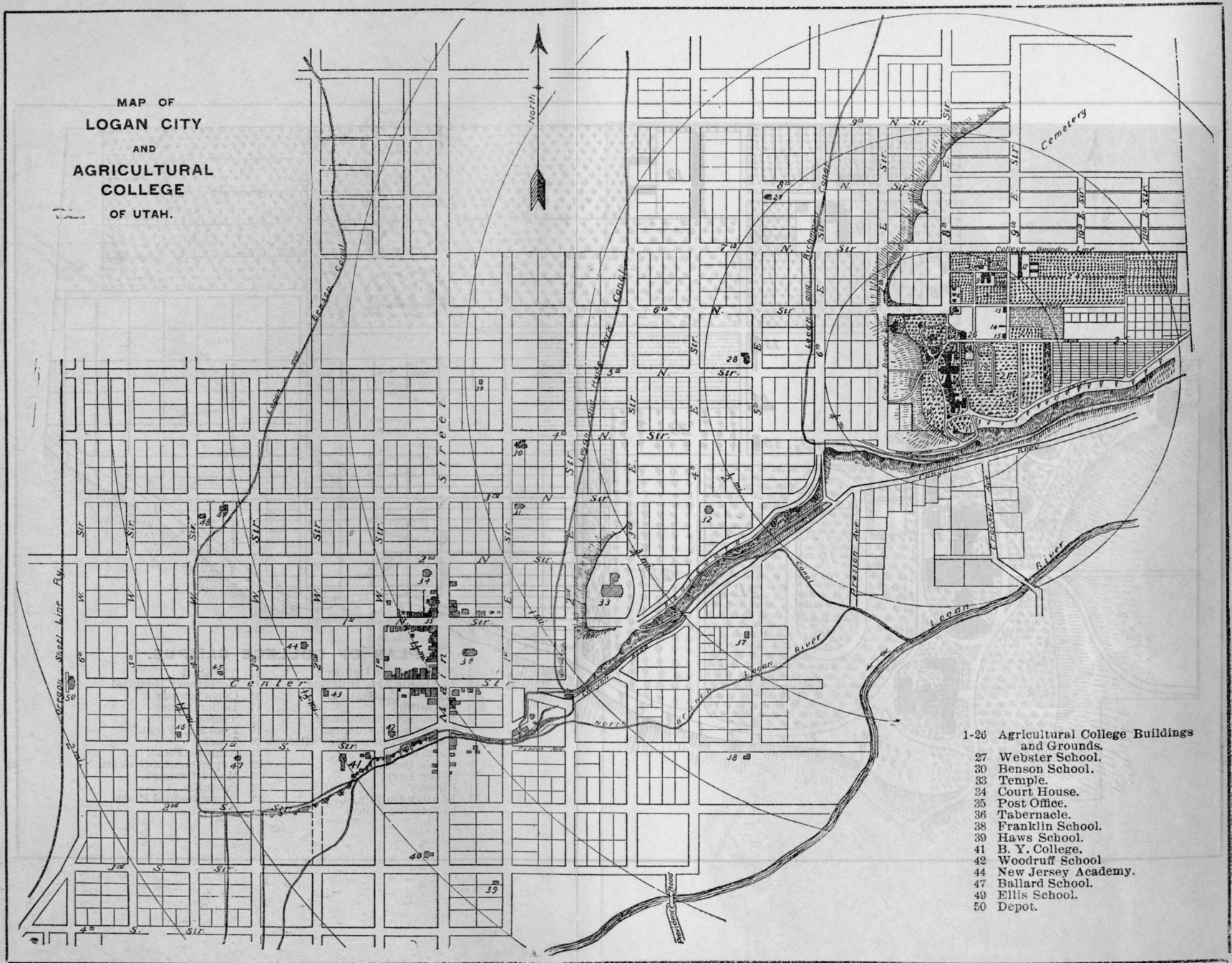


PLAN OF COLLEGE CAMPUS.

- | | |
|------------------------------|--------------------------|
| 1 Main College Building. | 14 Tie Sheds. |
| 2 Mechanic Arts Building. | 15 Veterinary Hospital. |
| 3 Experiment Station. | 16 Conservatory. |
| 4 Dormitory. | 17 Boiler House. |
| 5 President's Residence. | 18 Tennis Courts. |
| 6 Director's Residence. | 19 Foot Ball Field. |
| 7 Farm Superintendent's Res. | 20 Track. |
| 8 Farm Cottages. | 21 Athletic Field. |
| 9 Cattle Barn. | 22 Experimental Orchard. |
| 10 Sheep Barn. | 23 Model Orchard. |
| 11 Piggery. | 24 Pastures. |
| 12 Poultry Buildings. | 25 Experimental Plats. |
| 13 Vegetation House. | 26 Horse Barn. |

Franklin School
 Law School
 H. Y. College
 New York Academy
 Ballard School
 Hill School
 Dept.

MAP OF
LOGAN CITY
AND
AGRICULTURAL
COLLEGE
OF UTAH.



- 1-26 Agricultural College Buildings
and Grounds.
- 27 Webster School.
- 30 Benson School.
- 33 Temple.
- 34 Court House.
- 35 Post Office.
- 36 Tabernacle.
- 38 Franklin School.
- 39 Haws School.
- 41 B. Y. College.
- 42 Woodruff School
- 44 New Jersey Academy.
- 47 Ballard School.
- 49 Ellis School.
- 50 Depot.

1904

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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24	25	26	27	28	29	30	28	29	27	28	29	30	31	24	25	26	27	28	29	30
31
MAY							JUNE							JULY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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29	30	31	26	27	28	29	30	24	25	26	27	28	29	30	28	29	30	31
..	31
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
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25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	25	26	27	28	29	30	31
..	30	31

1905

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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29	30	31	26	27	28	26	27	28	29	30	31	..	23	24	25	26	27	28	29
..	30
MAY							JUNE							JULY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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28	29	30	31	25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	31
..	30	31
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	1	2	3	4	5	6	7	1	2	3	4	1	2	3	
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24	25	26	27	28	29	30	29	30	31	26	27	28	29	30	24	25	26	27	28	29	30
..	31

COLLEGE CALENDAR, 1904-1905.

FIRST TERM.

1904.

September 20, Tuesday:	Entrance examinations. Registration of former students, and of new students who are admitted on certificates.
September 21, Wednesday:	Instruction begins.
November 24, Thursday:*	Thanksgiving recess begins.
November 29, Tuesday:	Instruction resumed.
December 22, Thursday, (at noon):	Holiday recess begins.

1905.

January 4, Wednesday:	Instruction resumed. Winter courses begin.
January 28, Saturday:	First term ends. Winter course in Agriculture ends.

SECOND TERM.

January 31, Tuesday:	Second term begins.
March 25, Saturday:	Winter courses in Domestic Arts and in Mechanic Arts end.
April 14, Friday:	Arbor Day.
June 4, Sunday:	Baccalaureate sermon.
June 5, Monday:	Class Day.
June 6, Tuesday:	Commencement. Alumni Reunion.
June 7, Wednesday:	Summer vacation begins.
June 19, Monday:	Summer School begins.
July 22, Saturday:	Summer School ends.

*For this week, the usual Monday recess will be omitted.

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WILLIAM S. McCORNICK	Salt Lake City
EMILY S. RICHARDS	Salt Lake City
LORENZO HANSEN	Logan
ROSINA N. BAGLEY	Ogden
JOHN A. McALISTER	Logan
GEORGE C. WHITMORE	Nephi
EVAN R. OWEN	Wellsville

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JOHN A. BEXELL	Secretary
FRANCIS D. FARRELL	Assistant Secretary
ALLAN M. FLEMING	Treasurer

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Finance Committee.

George C. Whitmore, John A. McAlister, and Evan R. Owen.

Committee on Buildings and Improvements.

John A. McAlister, Lorenzo Hansen, and Evan R. Owen.

Committee on Agriculture.

Lorenzo Hansen, George C. Whitmore, and Evan R. Owen.

Committee on Mechanic Arts and Domestic Science and Arts.

Emily S. Richards, John A. McAlister, and Rosina N. Bagley.

Committee on Faculty and Courses of Study.

Rosina N. Bagley, Evan R. Owen, and Emily S. Richards.

Officers of Instruction and Administration

THE COLLEGE FACULTY.

[Arranged in Groups in the Order of Seniority of Appointment.]

WILLIAM JASPER KERR, D. Sc.,

PRESIDENT.

JOHN ANDREAS WIDTSOE, M. A., Ph. D.,

DIRECTOR OF EXPERIMENT STATION.

Professor of Chemistry.

DALINDA COTEY, B. S.,

Professor of Domestic Science.

JOSEPH JENSON, S. B.,

Professor of Mechanical Engineering.

JOHN FRANKLIN ENGLE, LL. B., Ph. D.,

Professor of History and Economics.

WILLARD SAMUEL LANGTON, B. S.,

Professor of Mathematics and Astronomy.

LEWIS ALFORD MERRILL, B. S.,

Professor of Agronomy.

ALFRED HORATIO UPHAM, A. M.,

Professor of English Language and Literature.

AGRICULTURAL COLLEGE OF UTAH.

WILLIAM NICOL HUTT, B. S. A.,
Professor of Horticulture and Botany.

ELMER DARWIN BALL, M. Sc.,
Professor of Zoology and Entomology.

ROBERT WALLACE CLARK, B. Agr.,
Professor of Animal Industry.

EDWARD WILLIAM ROBINSON,
Professor of Political Science and Transportation.

ALBERT EDGAR WILSON, A. B.,*
Professor of Modern Languages.

JOHN ANDREW BEXELL, A. M.,
SECRETARY BOARD OF TRUSTEES.
Professor of Commerce.

HENRY DELP STYER, Capt. U. S. A.,
Professor of Military Science and Tactics.

Professor of Civil Engineering.

†

Professor of Music.

PETER A. YODER, M. A., Ph. D.,
Associate Professor of Chemistry.

JAMES DRYDEN,
Assistant Professor of Meteorology and Animal Industry.

*On leave of absence.

†A Professor of Music and three Instructors in Music will be employed before the College opens in September, 1904.

WILLIAM PETERSON, B. S.,

Assistant Professor of Geology and Mineralogy.

JOSEPH WILLIAM JENSEN, S. B.,

Assistant Professor of Civil Engineering.

GEORGE PETER CAMPBELL, B. S.,

Assistant Professor of Physical Education.

LEANDER A. OSTIEN, B. S., LL. B., Ph. B.,

Assistant Professor of Mathematics.

FRANK RUSSELL ARNOLD, A. M.,

Assistant Professor of Modern Languages.

JOHN THOMAS CAINE, JR., B. S.,

REGISTRAR.

Instructor in English.

ELIZABETH CHURCH SMITH, B. L.,

Librarian.

RUTH EVELYN MOENCH,

Instructor in English and Physical Culture.

AUGUST J. HANSEN,

Foreman in Carpentry.

JOHN ALVIN CROCKETT,

Instructor in Dairy Husbandry.

LYDIA HOLMGREN, B. S.,
Instructor in Domestic Science.

EDWARD PARLEY PULLEY, B. S.,
Instructor in Mechanical Engineering.

RHODA BOWEN COOK,
Instructor in Sewing and Millinery.

WALTER WESLEY McLAUGHLIN, B. S.,
Irrigation Engineer in Experiment Station.

EDWIN AUGUSTUS WILLIAMS,
Foreman in Forging.

HENRY JEROME STUTTERD,
Instructor in Drawing.

M. ELIZABETH WYANT, Ph. B.,
Instructor in English Language and Literature.

AMANDA HOLMGREN, B. S.,
Instructor in English Language and Literature.

JOHN HASLAM BANKHEAD, B. S.,
Instructor in Commerce.

WILLIAM ARTHUR JENSEN,
Instructor in Stenography and Typewriting.

DAVID MORGAN STEPHENS, B. S.,
President's Private Secretary.

ROBERT STEWART, B. S.,
Station Assistant in Chemistry.

WILLIAM JARDINE, B. S.,
Instructor in Agronomy.

NIELS M. HANSEN, JR., S. B.
Instructor in Civil Engineering.

JOHN F. CHRISTIANSON,
Instructor in Mathematics.

GRACE FISHER, B. S.,
Instructor in History.

JOSEPH EAMES GREAVES, B. S.,
Station Assistant in Chemistry.

DORA QUAYLE,
Assistant in Sewing.

LOUIE THOMAS,
Assistant in Sewing.

FREDERICK CHRISTIAN WANGSGARD,
Assistant in Forging.

FRED ARTHUR DAHLE.
Assistant in Carpentry.

AGRICULTURAL COLLEGE OF UTAH.

ELMER GEORGE PETERSON.

Assistant in Zoology.

FRANCIS DAVID FARRELL.

Assistant Secretary Board of Trustees.

MINNIE PETERSON,

Assistant in Household Science.

INEZ POWELL,

Assistant in Household Science.

HOWARD PETER MADSEN,

Assistant in Carpentry.

CHARLES BATT.*Superintendent of Steam Heating and Water Works.*

RASMUS OLUF LARSEN,

Head Janitor.

SPECIAL LECTURERS.

ABRAHAM F. DOREMUS,

STATE ENGINEER, SALT LAKE CITY, UTAH.

Irrigation and Water Storage.

GEORGE L. SWENDSEN, S. B.,

ENGINEER, U. S. GEOLOGICAL SURVEY, SALT LAKE CITY, UTAH.

Government Work in Hydrography and Arid Land Reclamation.

ROBERT F. HAYWARD, E. E.,

CHIEF ENGINEER, UTAH LIGHT AND RAILWAY CO.,
SALT LAKE CITY, UTAH.

Electric Power Generation, Transmission and Application.

GEORGE W. SNOW,

CITY ENGINEER, SALT LAKE CITY, UTAH.

Municipal and Railroad Engineering.

THE COLLEGE COUNCIL.

THE PRESIDENT, *Chairman.*

THE REGISTRAR, *ex officio.*

PROFESSOR JOHN ANDREAS WIDTSOE.

PROFESSOR DALINDA COTEY.

PROFESSOR JOSEPH JENSON.

PROFESSOR JOHN FRANKLIN ENGLE.

PROFESSOR WILLARD SAMUEL LANGTON.

PROFESSOR LEWIS ALFORD MERRILL.

PROFESSOR ALFRED HORATIO UPHAM.

PROFESSOR WILLIAM NICOL HUTT.

PROFESSOR ELMER DARWIN BALL.

PROFESSOR ROBERT WALLACE CLARK.

PROFESSOR EDWARD WILLIAM ROBINSON.

PROFESSOR ALBERT EDGAR WILSON.

PROFESSOR JOHN ANDREW BEXELL.

ASSOCIATE PROFESSOR PETER A. YODER.

ASSISTANT PROFESSOR JAMES DRYDEN.

ASSISTANT PROFESSOR WILLIAM PETERSON.

ASSISTANT PROFESSOR JOSEPH WILLIAM JENSEN.

ASSISTANT PROFESSOR GEORGE PETER CAMPBELL.

ASSISTANT PROFESSOR OSTIEN.

ASSISTANT PROFESSOR ARNOLD.

EXPERIMENT STATION STAFF.

WILLIAM JASPER KERR,
President of the College.

JOHN ANDREAS WIDTSOE,
Director and Chemist.

JAMES DRYDEN.
Meteorologist and Poultry Manager.

LEWIS ALFORD MERRILL.
Agronomist.

WILLIAM NICOL HUTT,
Horticulturist.

ELMER DARWIN BALL,
Entomologist.

ROBERT WALLACE CLARK,
Animal Industry.

WALTER WESLEY McLAUGHLIN,
Irrigation Engineer.

PETER A. YODER.
Associate Chemist.

JOHN ALVIN CROCKETT,
Assistant Dairyman.

ROBERT STEWART,
Assistant Chemist.

WILLIAM JARDINE,
Assistant Agronomist.

JOSEPH EAMES GREAVES.
Assistant Chemist.

FOREMEN.

JOSEPH B. NELSON,
Agronomy.

JOHN HOPKINS,
Poultry.

HENRY WALLACE CROCKETT,
Horticulture.

WILLIAM HODGES,
Animal Industry.

STANDING COMMITTEES.

1904-1905.

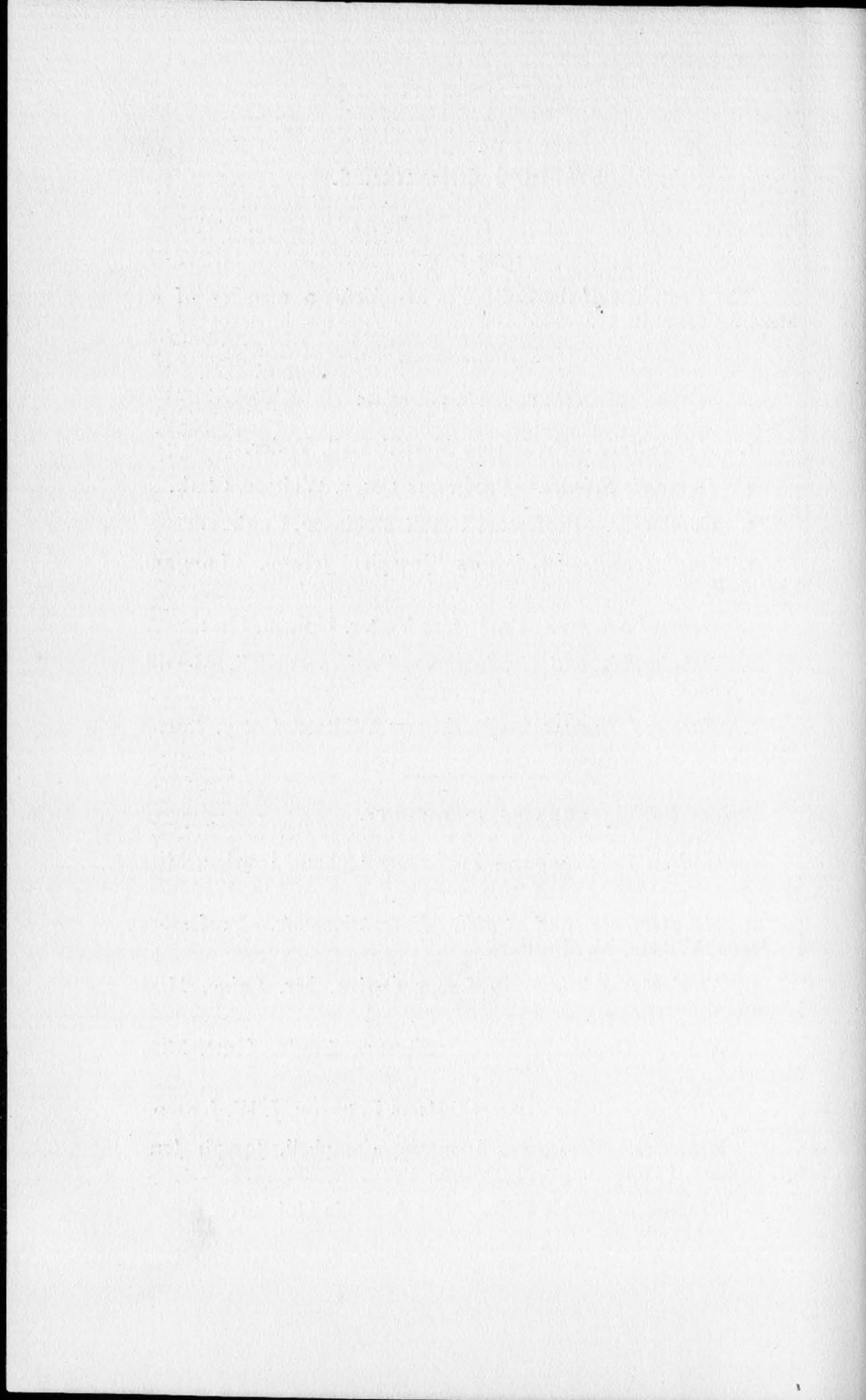
The President of the College is *ex-officio* a member of all standing committees.

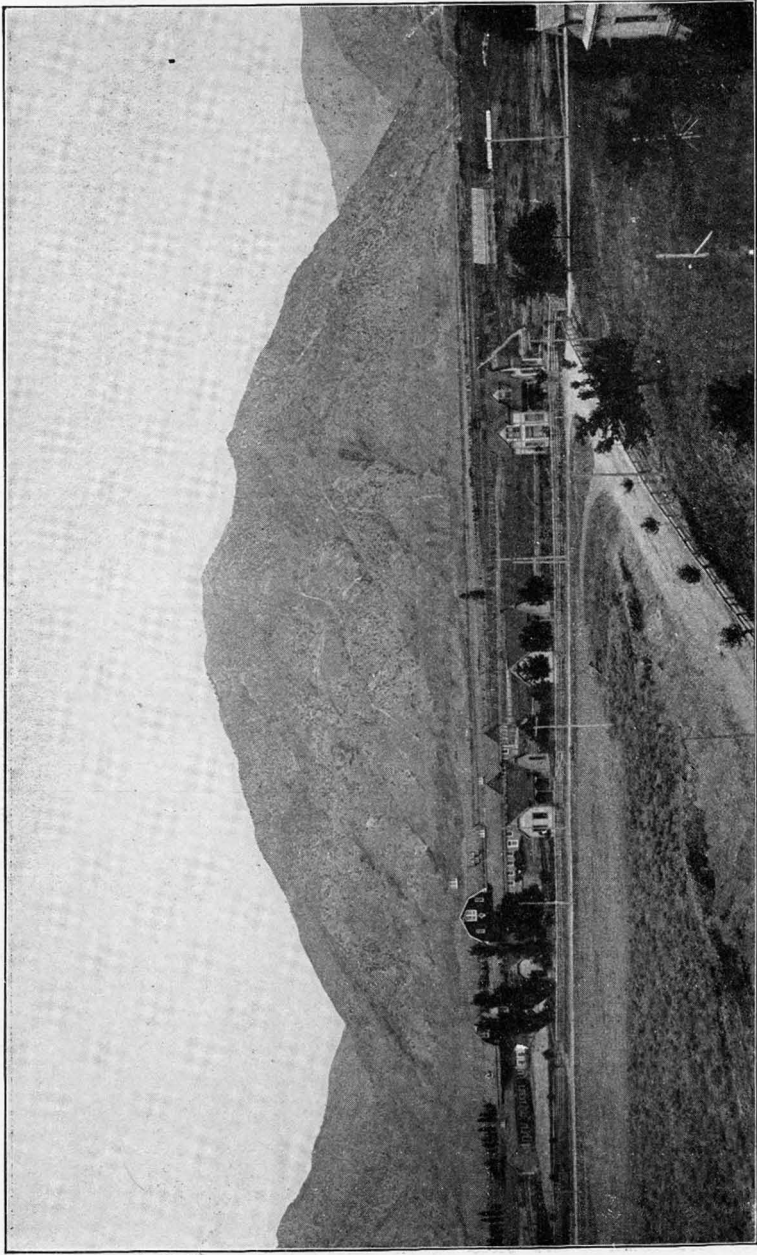
THE COLLEGE COUNCIL.

1. *Agriculture*.—Professors Merrill, Ball, Yoder.
 2. *Domestic Science*.—Professors Cotey, Widtsoe, Clark.
 3. *Commerce*.—Professors Bexell, Robinson, Engle.
 4. *Engineering*.—Professors Joseph Jenson, Langton, Campbell.
 5. *General Science*.—Professors Yoder, Upham, Hutt.
 6. *Scholarship and Graduation*.—Professors Ball, Merrill, J. W. Jensen.
 7. *Farmers' Institutes*.—Professors Widtsoe, Cotey, Joseph Jenson.
-

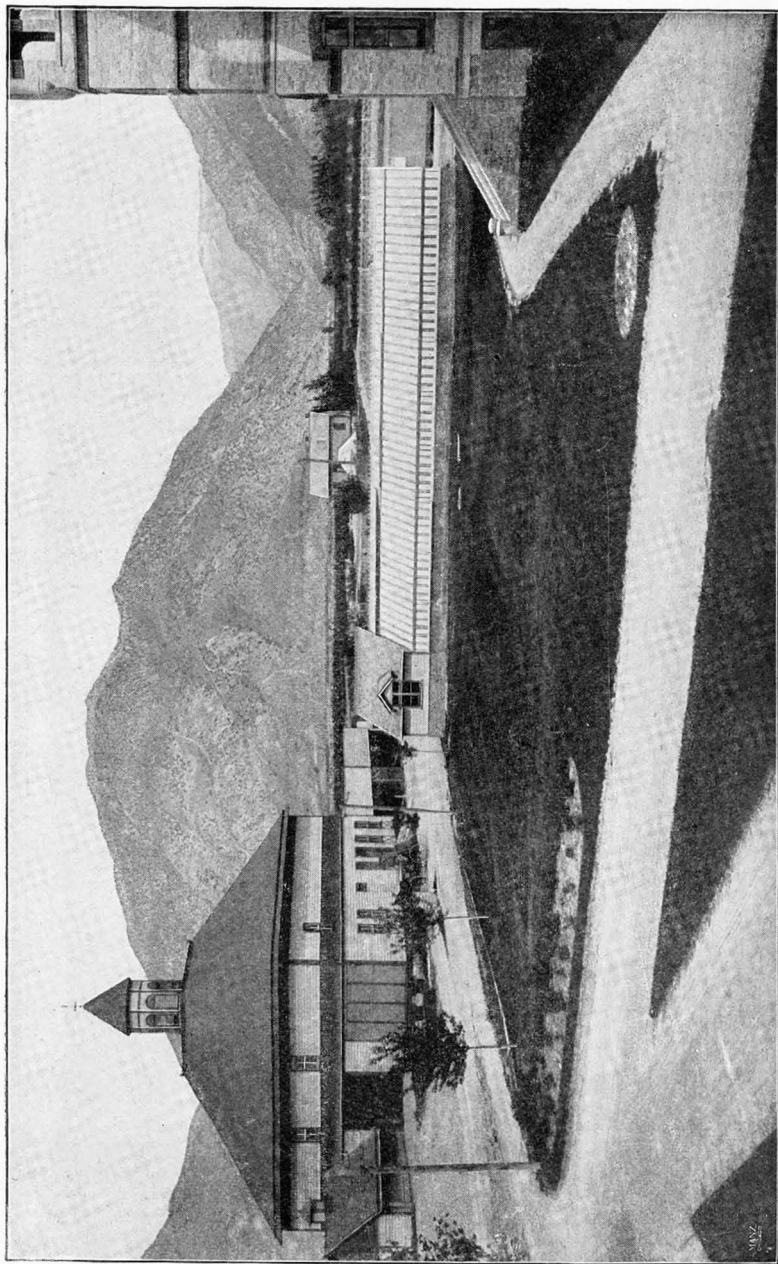
THE COLLEGE FACULTY.

1. *College Publications*.—Professors Upham, Dryden, Miss Wyant.
2. *Amusements and Public Entertainments*.—Professors Robinson, Wilson, Mr. Stutterd.
3. *Students' Affairs*.—Professor Ostien, Mr. Caine, Miss Lydia Holmgren.
4. *Student Organizations*.—Professors Engle, Hutt, Miss Moench.
5. *Attendance*.—Professors Wilson, Peterson, J. W. Jensen.
6. *Athletics*.—Professors Langton, Campbell, Joseph Jenson, Upham, Peterson.
7. *Preparatory*.—Mr Caine, Miss Amanda Holmgren.

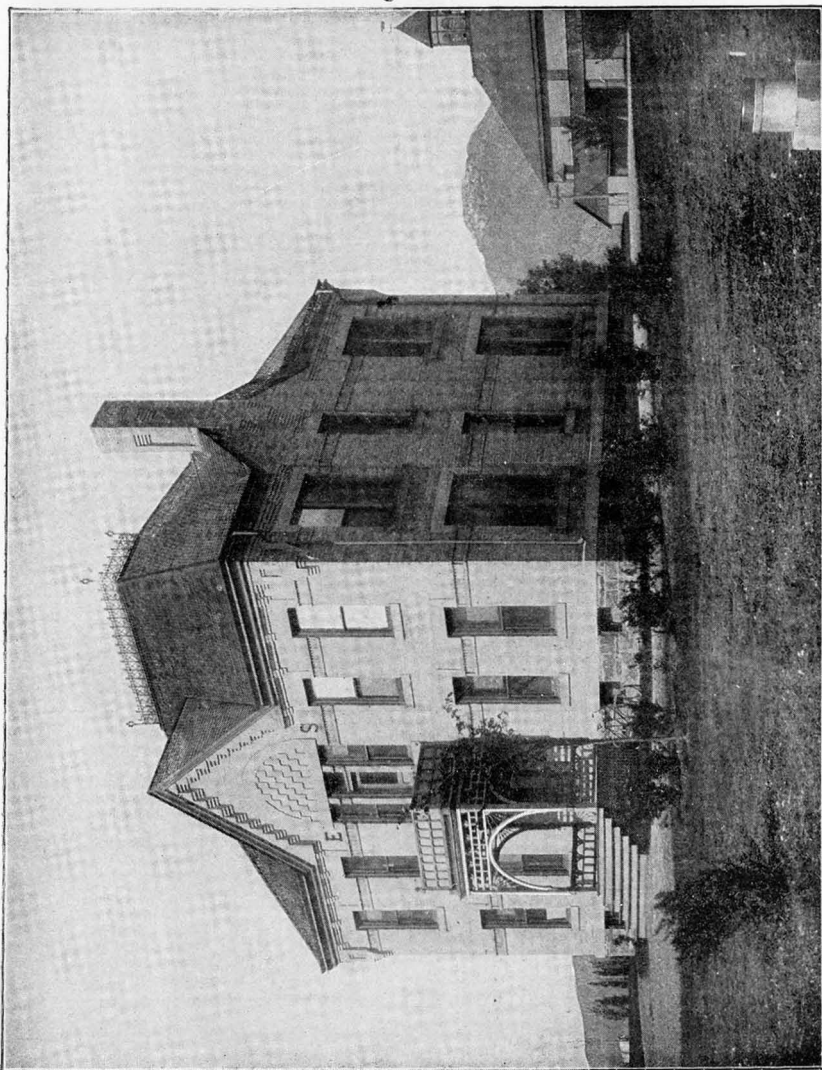




SECTION OF COLLEGE CAMPUS AND BUILDINGS.



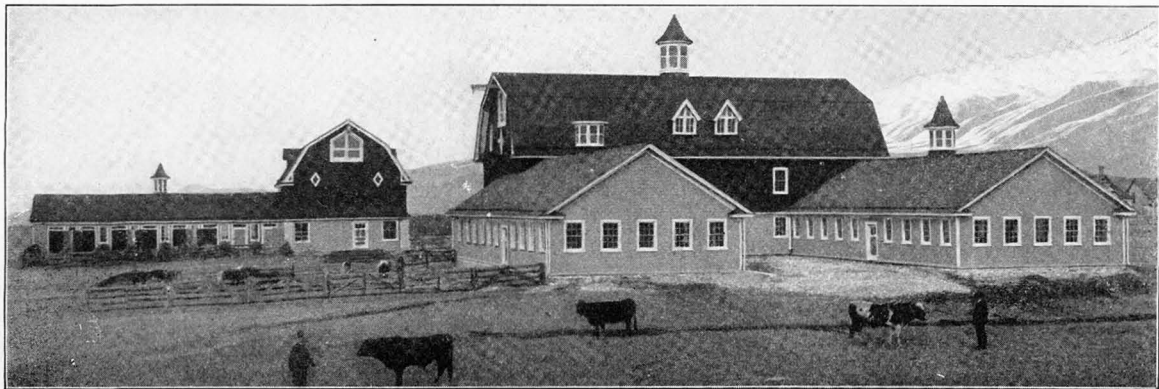
HORSE BARN, CONSERVATORY, VETERINARY HOSPITAL.



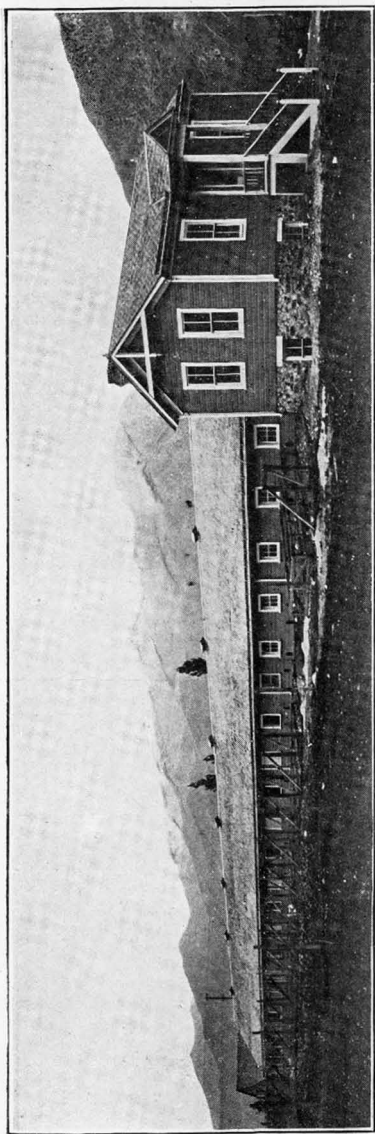
EXPERIMENT STATION BUILDING.



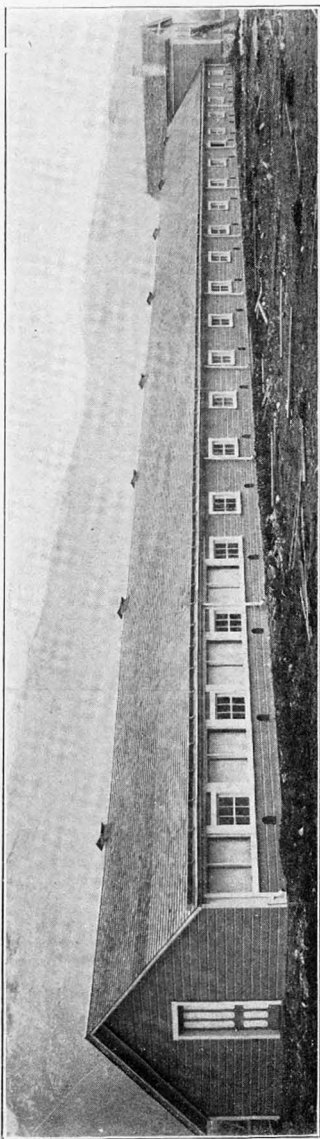
COLLEGE SHEEP BARN AND CATTLE BARN, FROM NORTH-EAST.



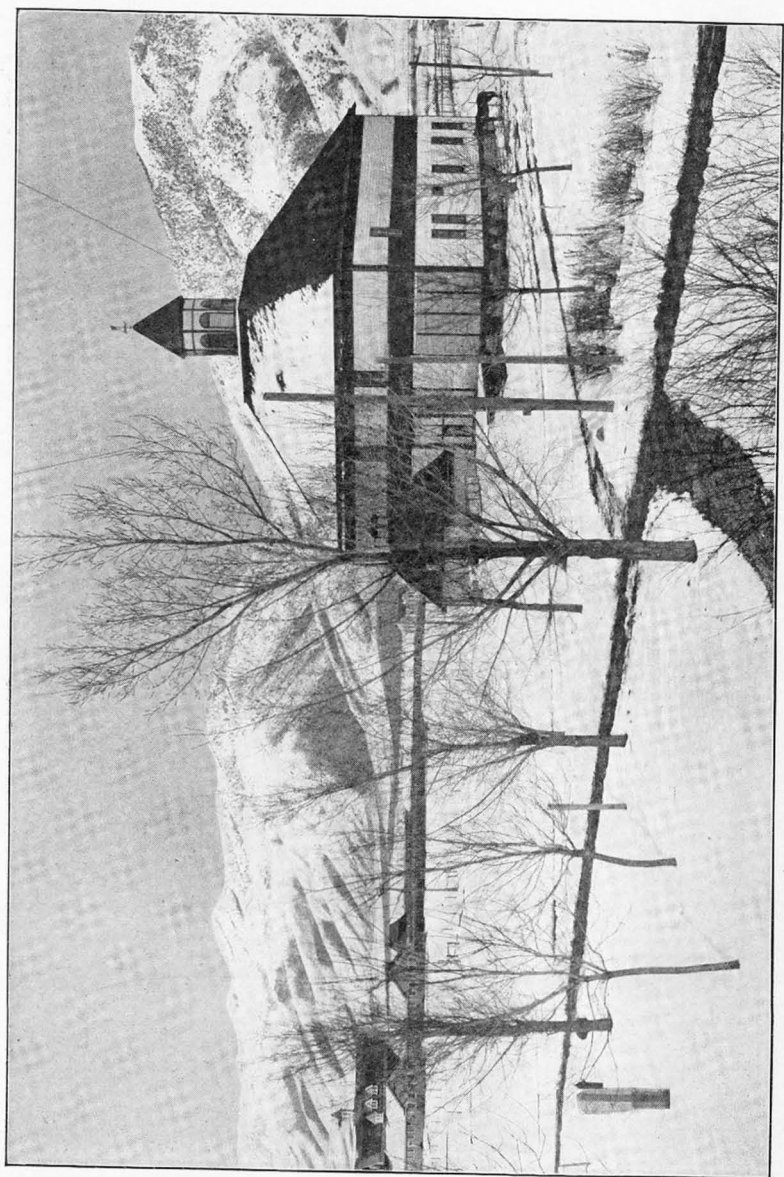
SHEEP BARN AND CATTLE BARN, FROM SOUTH-WEST.



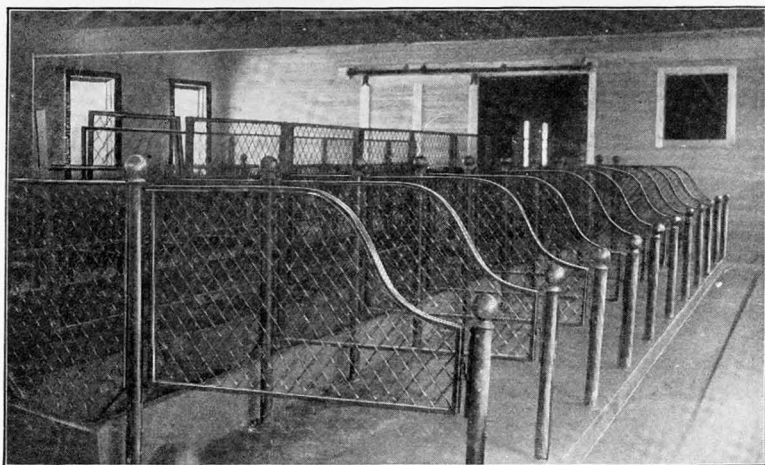
POULTRY BUILDING.



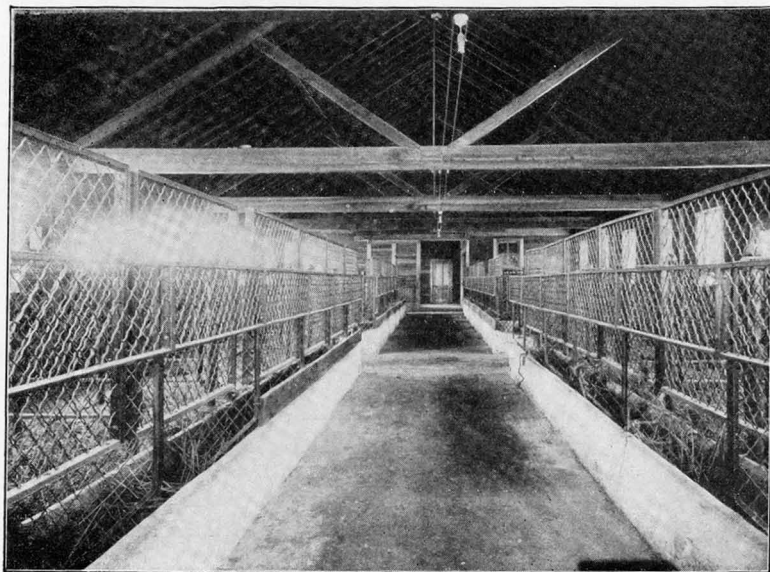
REAR VIEW OF POULTRY BUILDING BEFORE COMPLETION OF YARDS.



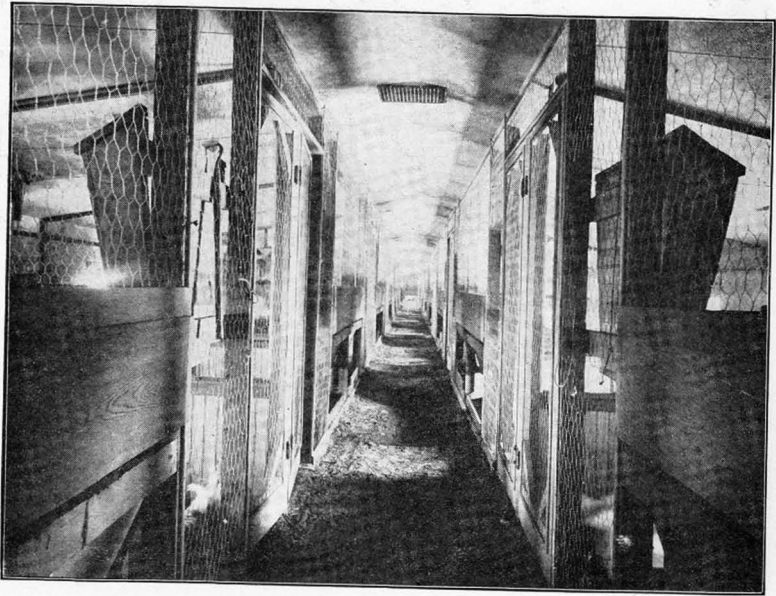
WINTER SCENE, SHOWING FARM BUILDINGS.



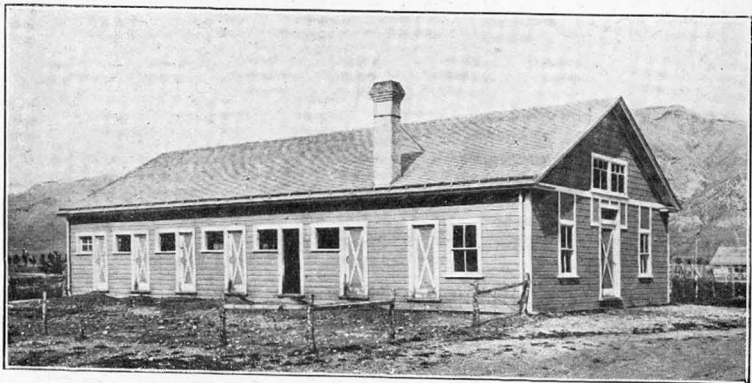
STALLS IN CATTLE BARN.



INTERIOR VIEW—CATTLE BARN.



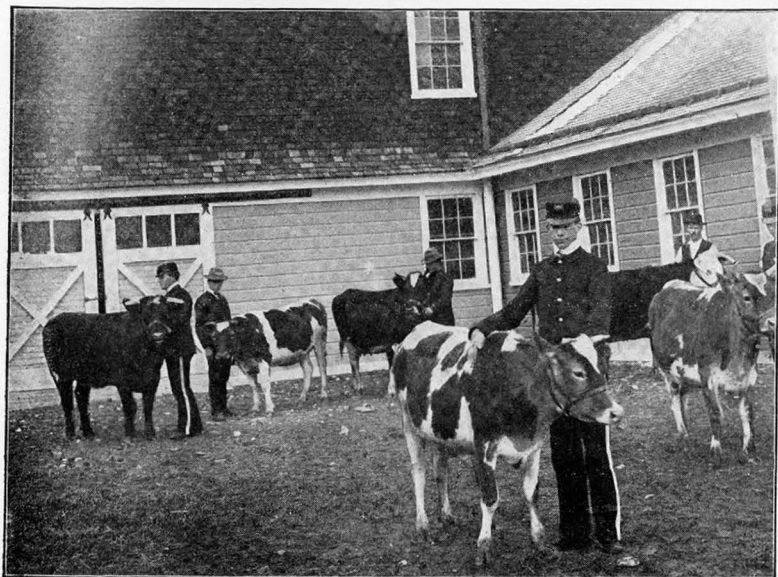
INTERIOR VIEW—POULTRY BUILDING.



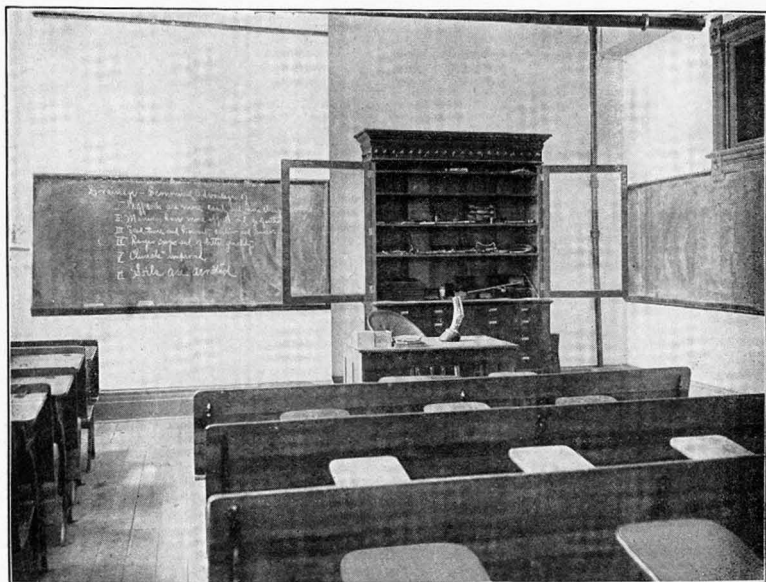
PIGGERY.



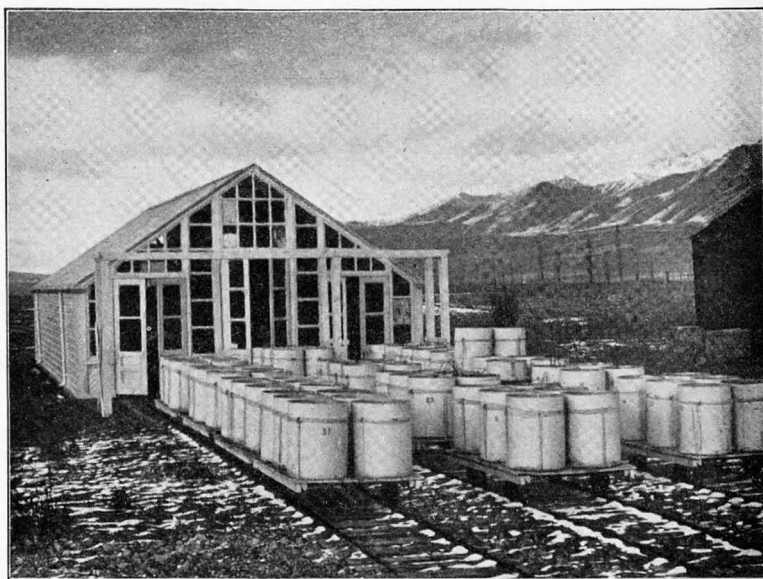
CLASS IN STOCK-JUDGING.



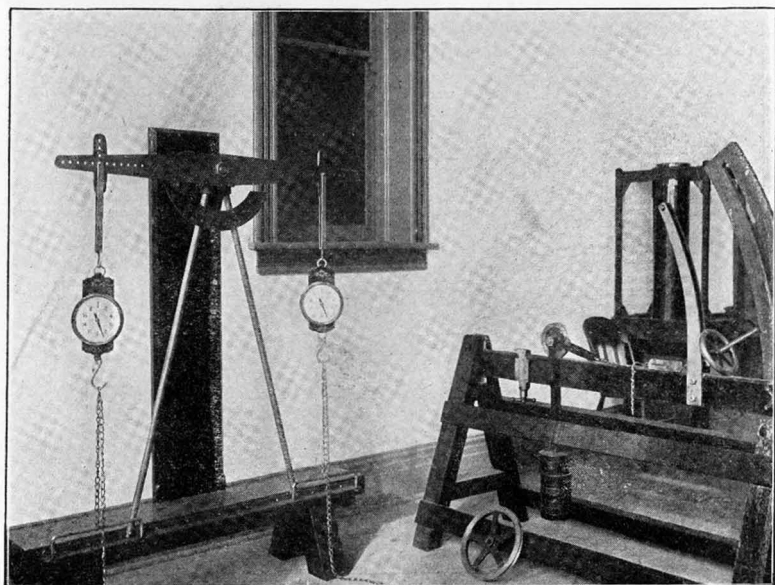
COLLEGE PURE-BRED CATTLE—SHORTHORN, GUERNSEY, HOLSTEIN, HEREFORD.



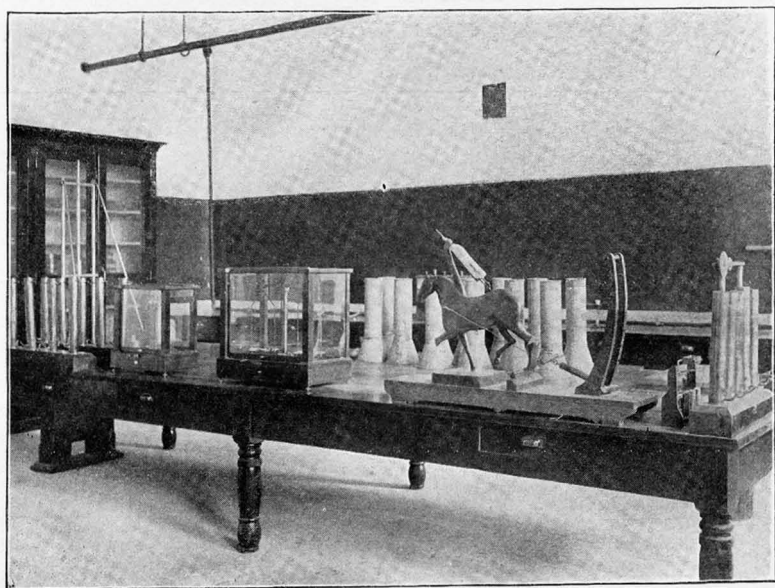
VETERINARY SCIENCE CLASS ROOM.



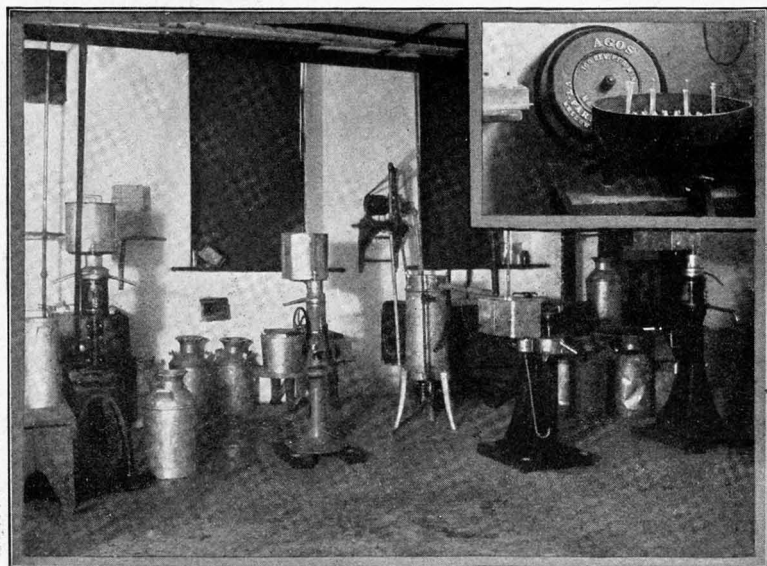
VEGETATION HOUSE FOR EXPERIMENTAL WORK IN AGRONOMY AND IRRIGATION.



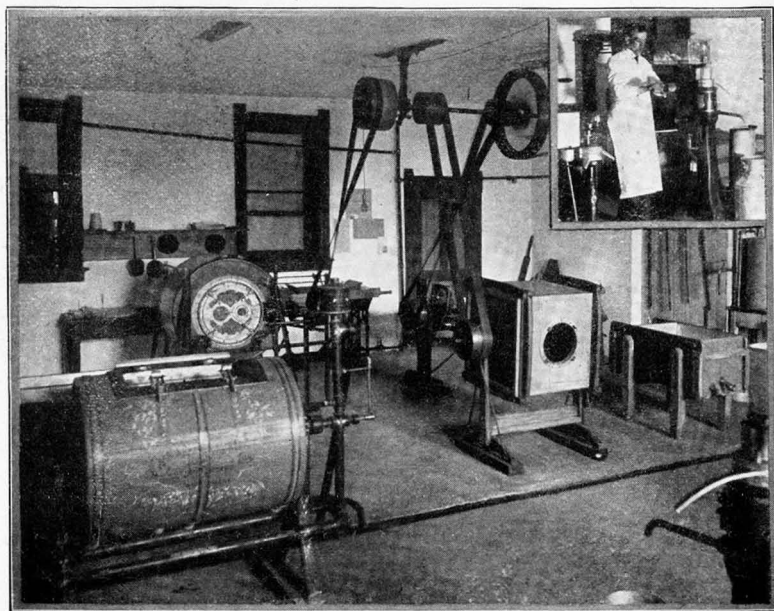
AGRICULTURAL PHYSICS LABORATORY.



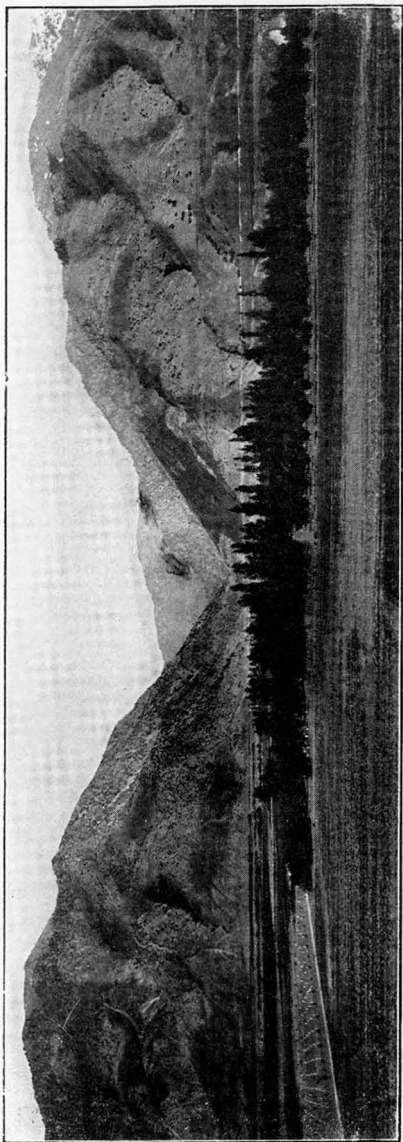
AGRICULTURAL PHYSICS LABORATORY.



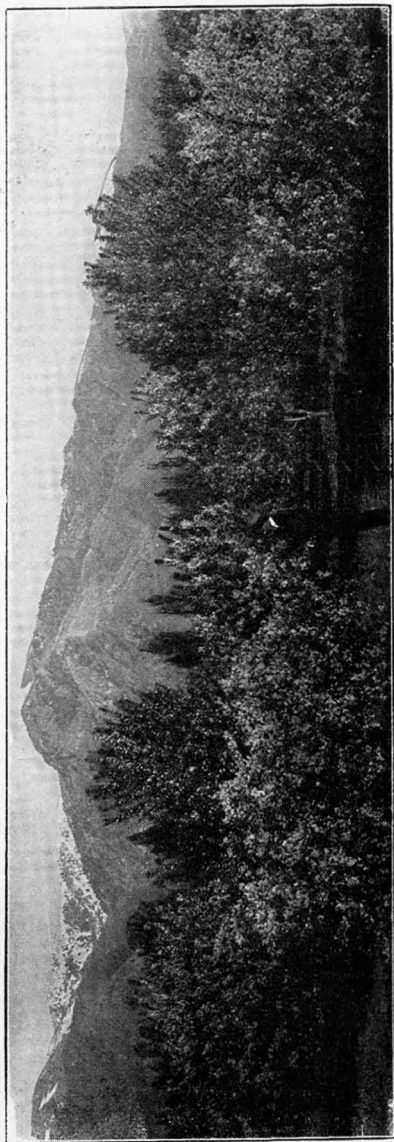
DAIRY—SHOWING SEPARATORS AND BABCOCK TEST.



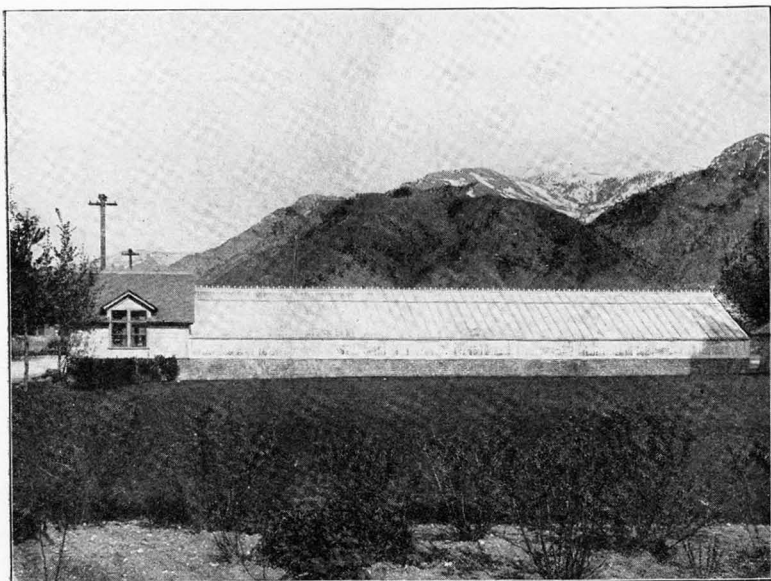
SECTION OF COLLEGE DAIRY.



ORCHARD.



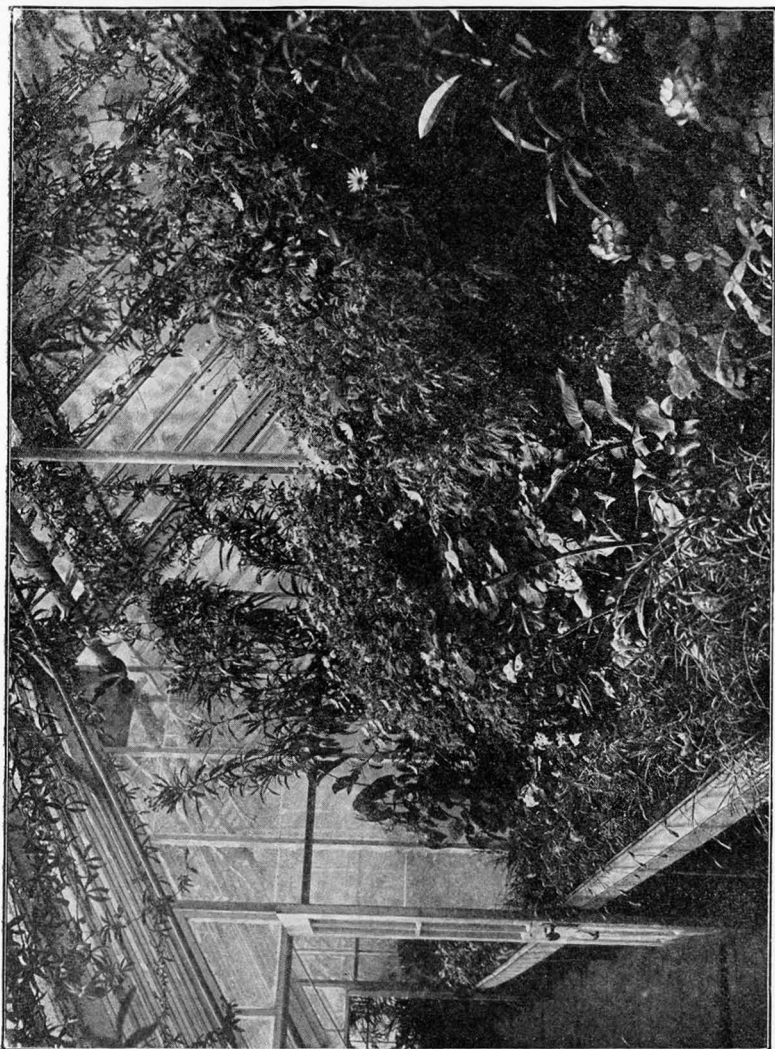
VIEW IN COLLEGE ORCHARD.



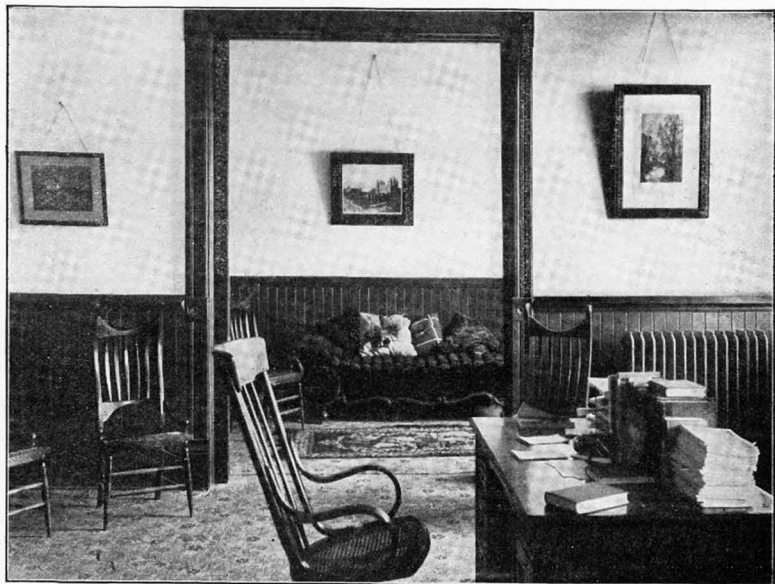
CONSERVATORY.



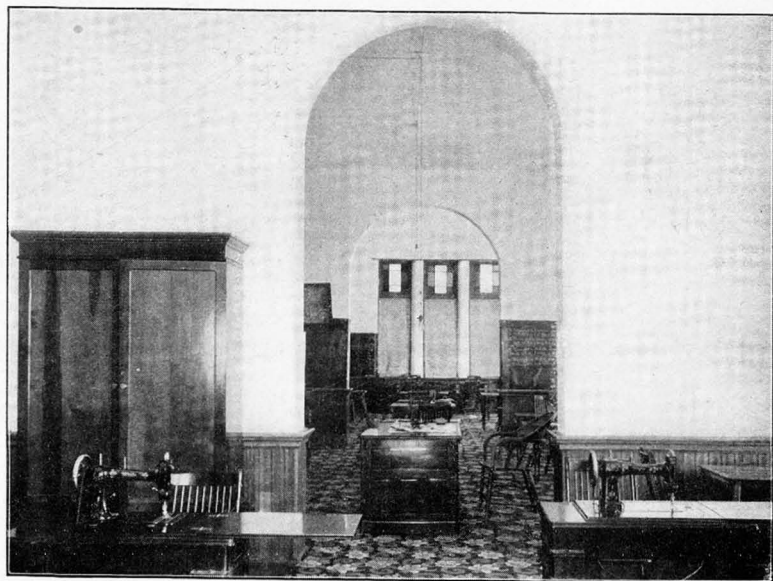
LESSON IN PRUNING, DEPARTMENT OF HORTICULTURE.



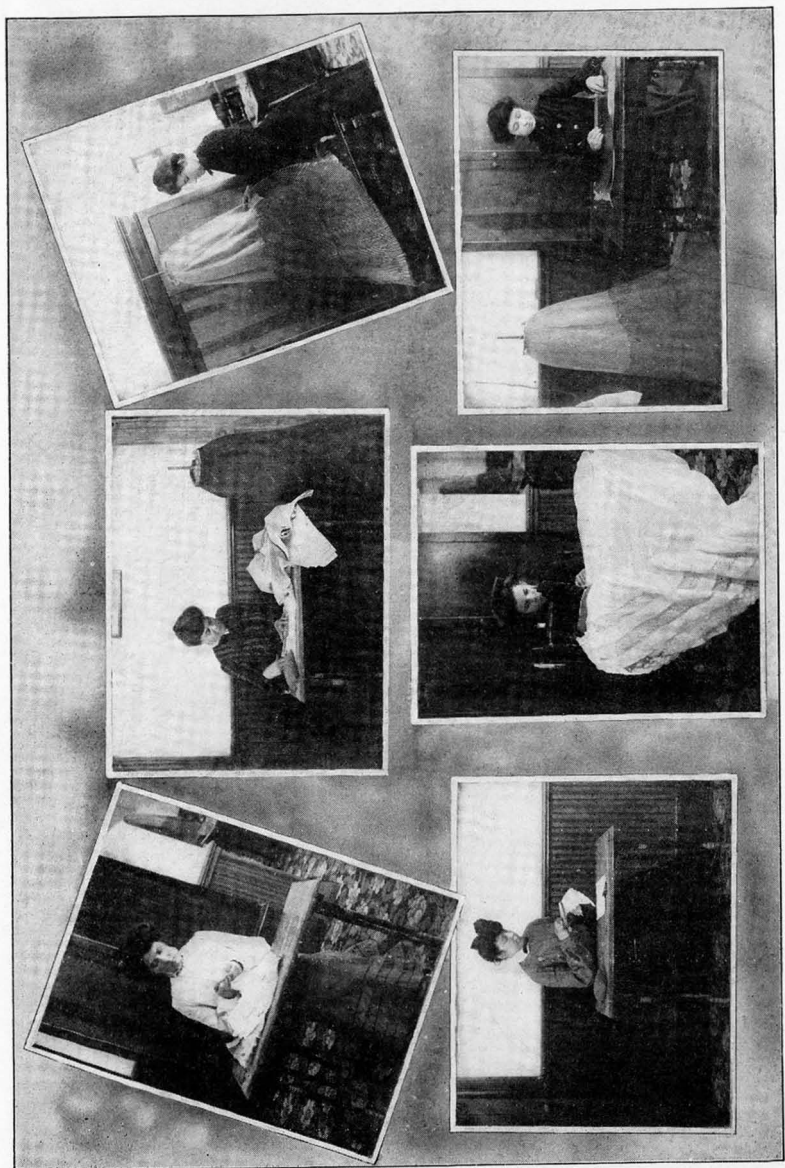
VIEW IN CONSERVATORY.



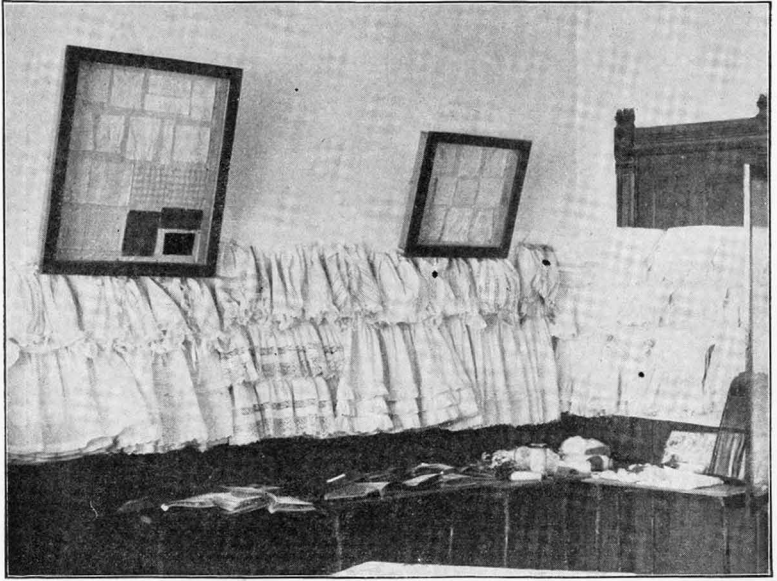
OFFICES, DEPARTMENT OF DOMESTIC SCIENCE AND ARTS.



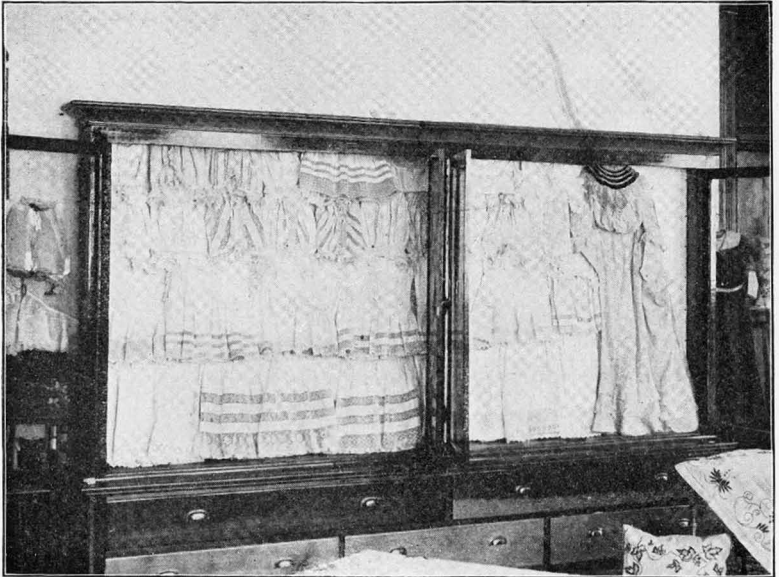
VIEW IN SEWING ROOMS.



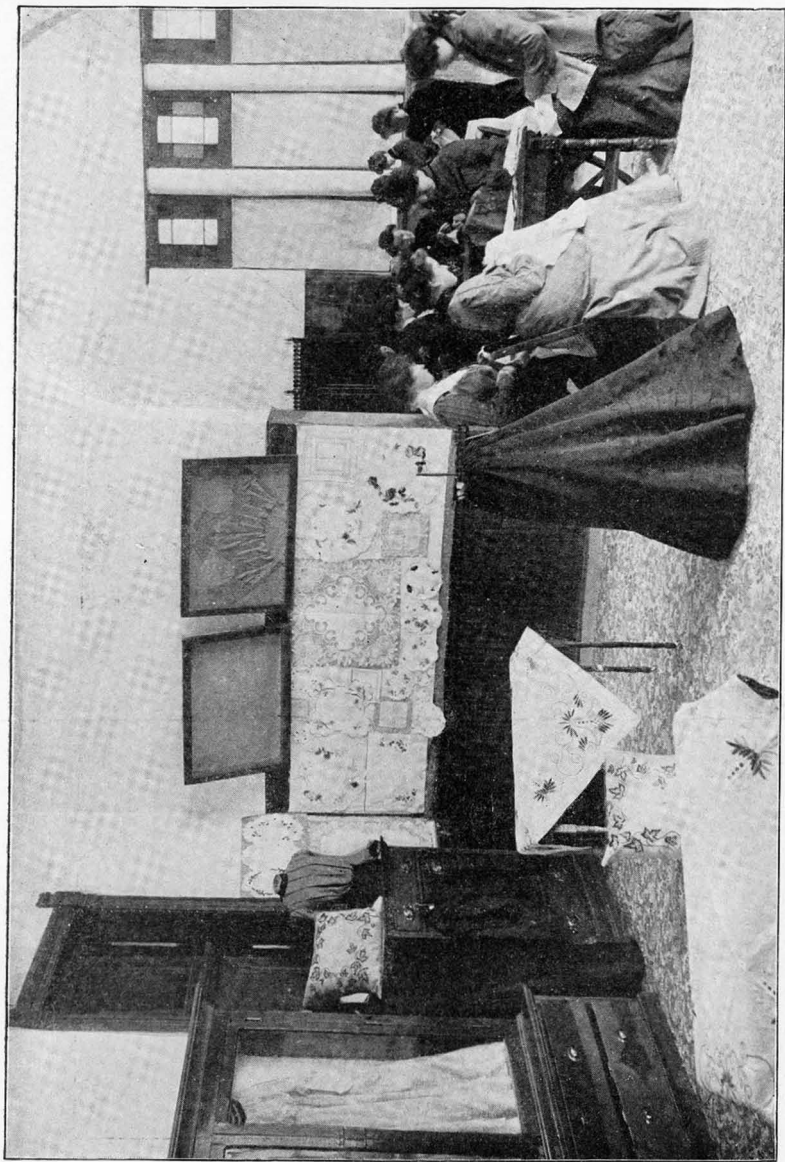
VIEWS IN COLLEGE SEWING ROOMS.



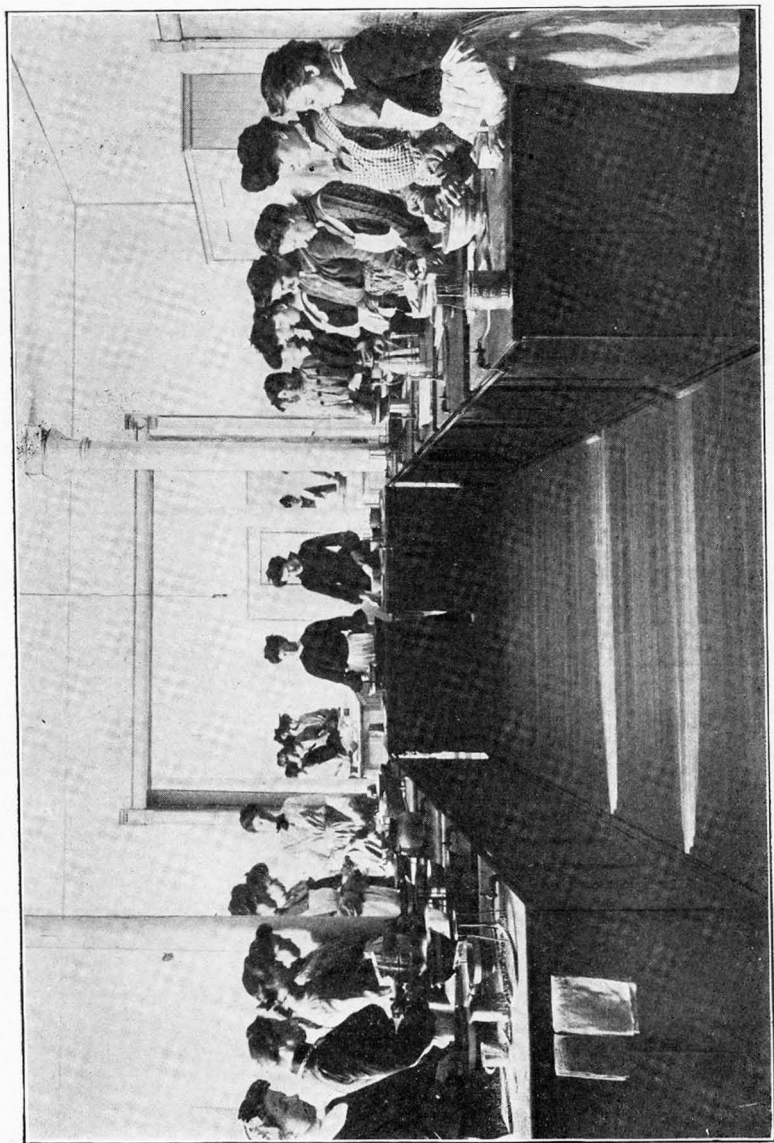
SAMPLES OF STUDENTS' WORK IN SEWING.



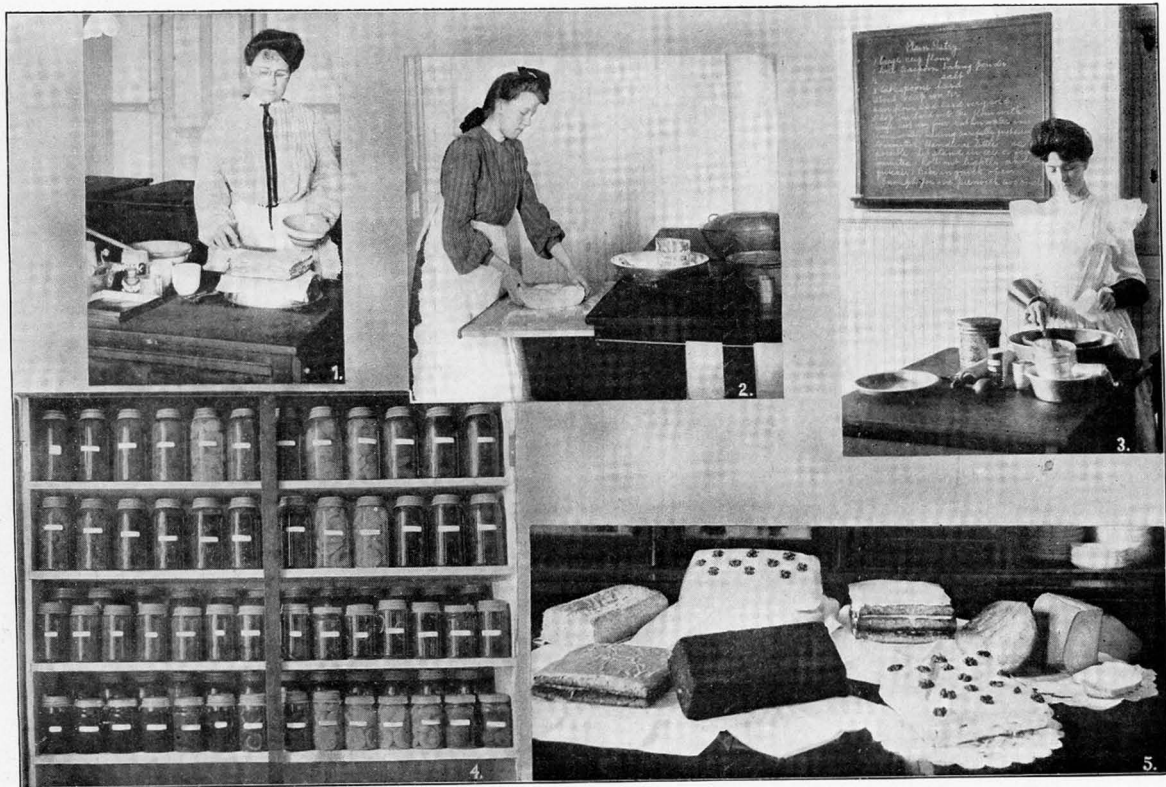
SAMPLES OF STUDENTS' WORK IN SEWING.



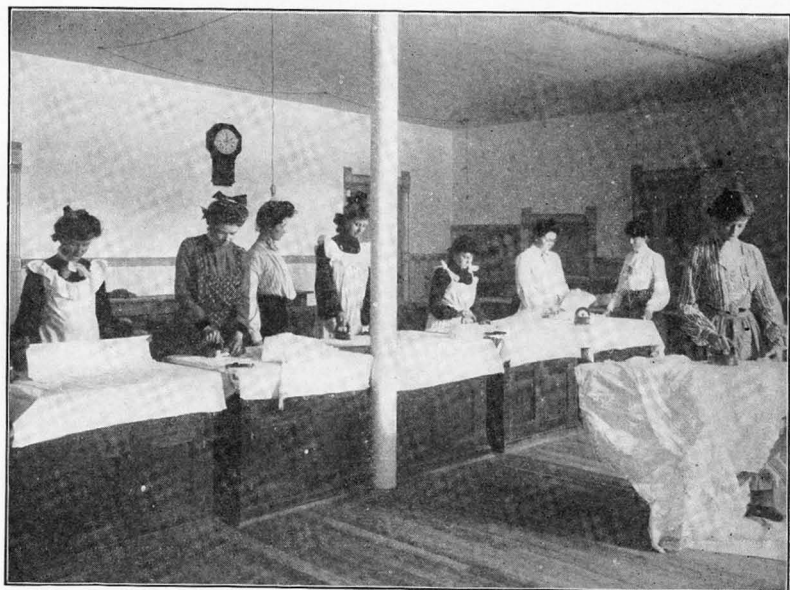
COLLEGE SEWING ROOMS, WITH SAMPLES OF STUDENTS' WORK.



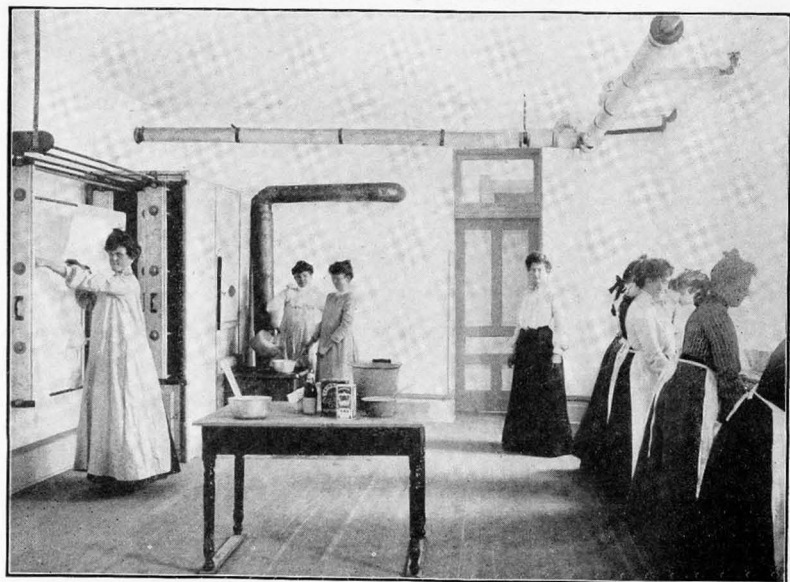
VIEW IN COLLEGE KITCHENS.



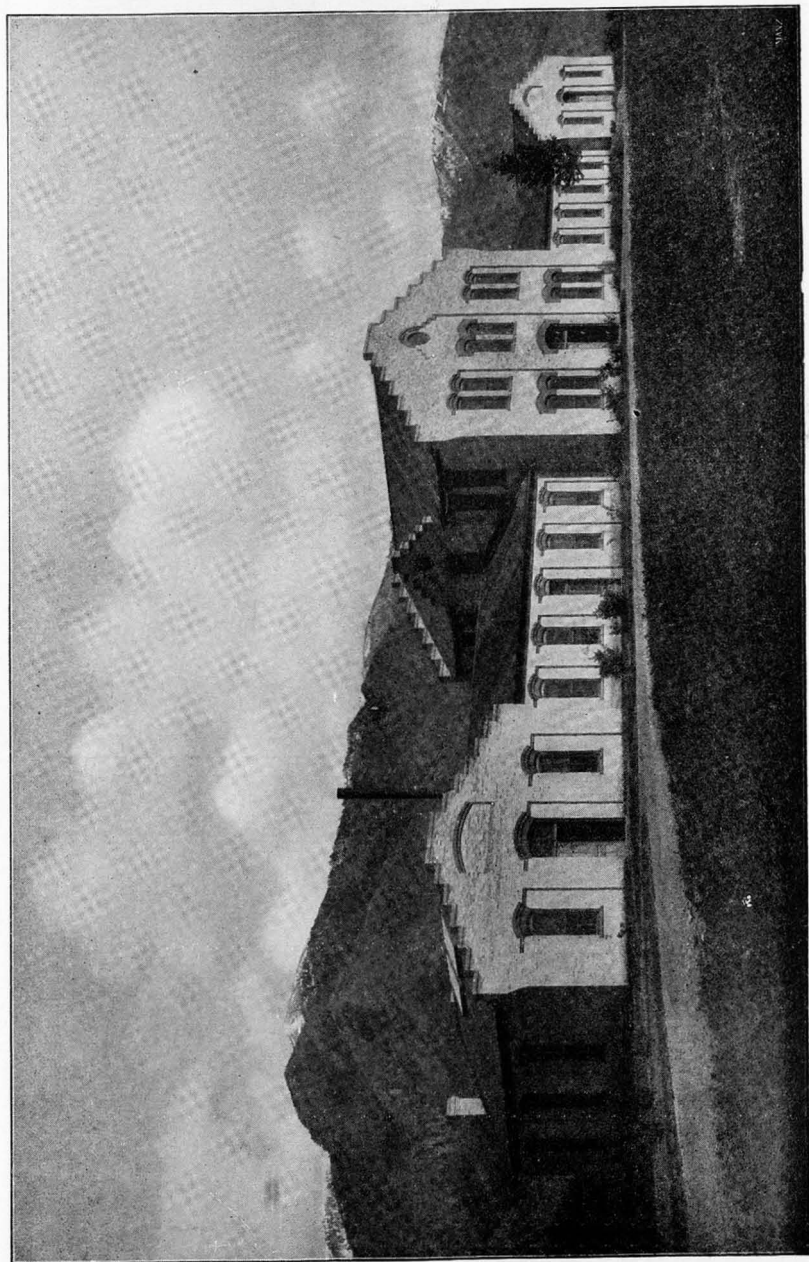
1. STUDENT MAKING CAKE. 2. STUDENT MAKING BREAD. 3. STUDENT MAKING PIE.
4. SAMPLES OF FRUIT BOTTLED BY STUDENTS. 5. SAMPLES OF CAKE AND
BREAD MADE BY STUDENTS.



LAUNDRY—STUDENTS IRONING.



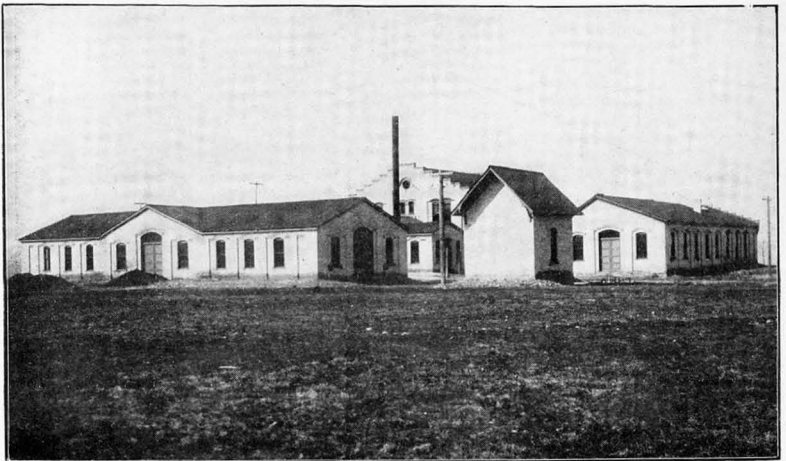
LAUNDRY—A WASHING LESSON.



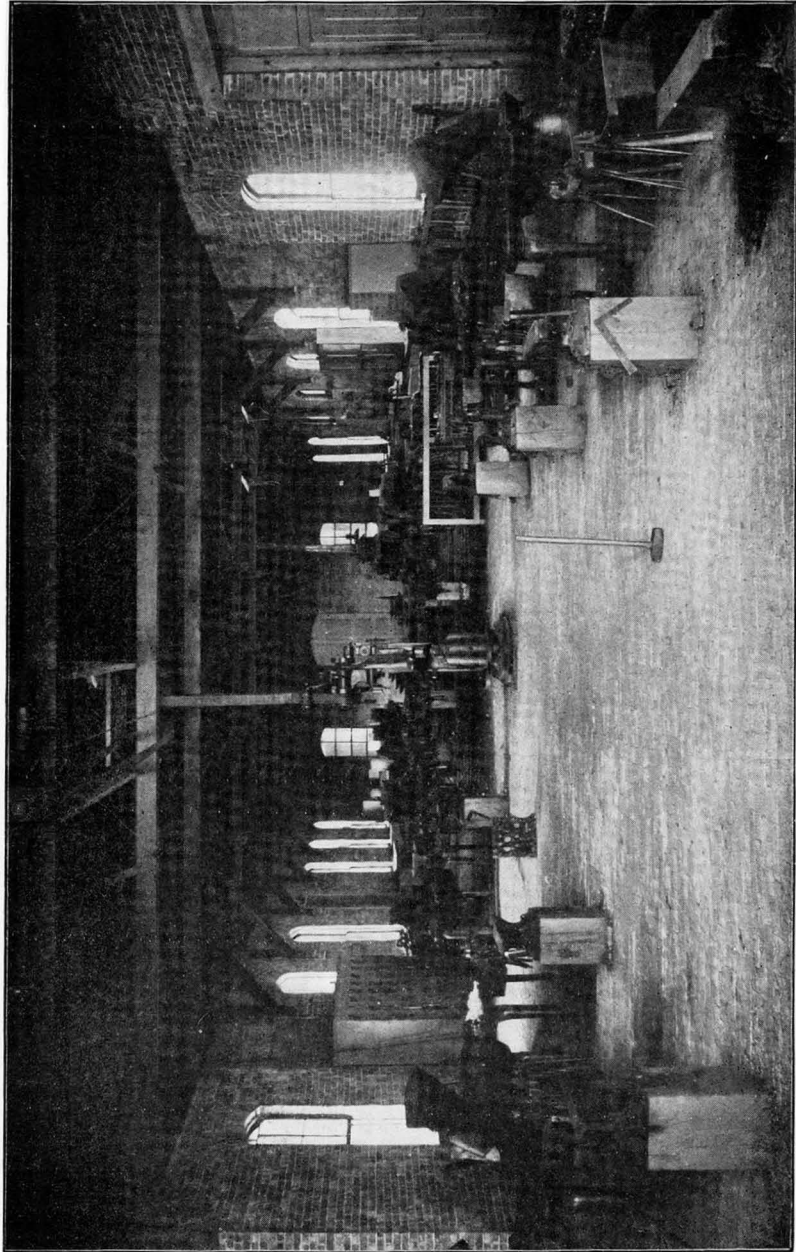
MECHANIC ARTS BUILDINGS—FRONT VIEW.



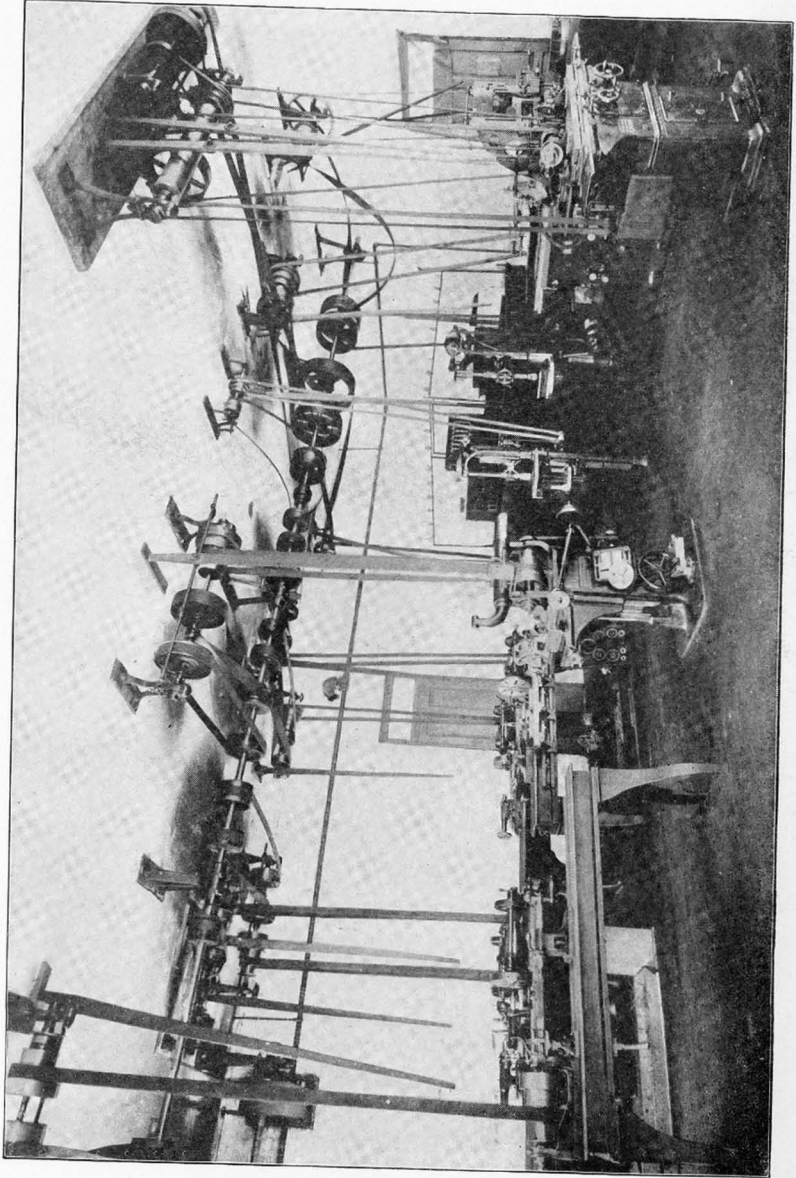
MECHANIC ARTS BUILDINGS—FROM SOUTH COLLEGE TOWER.



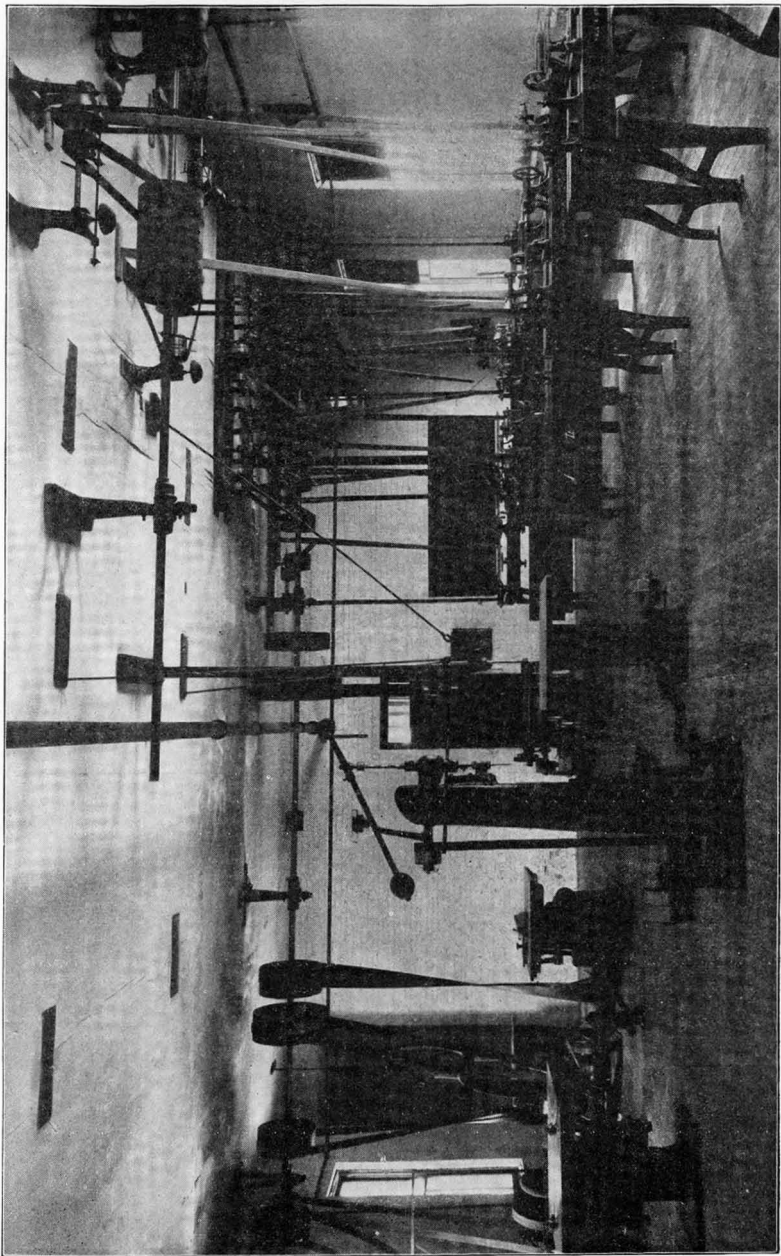
MECHANIC ARTS BUILDINGS—FROM NORTH -EAST.



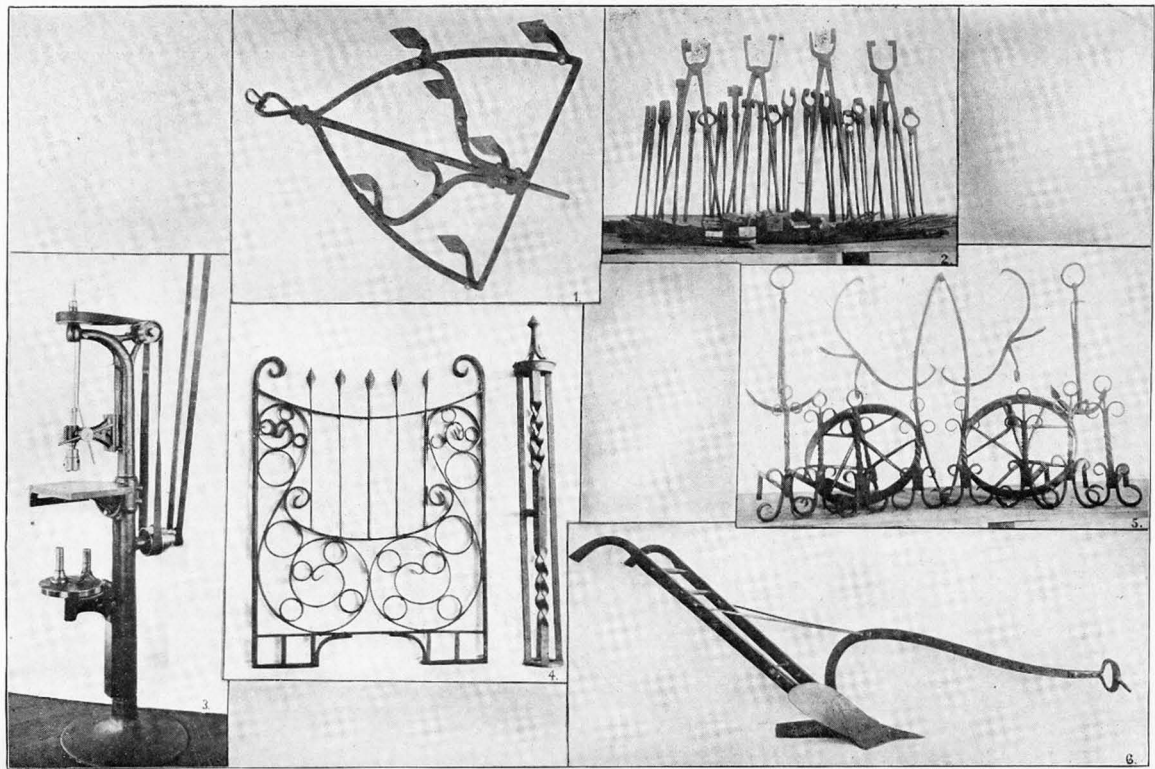
FORGE ROOM.



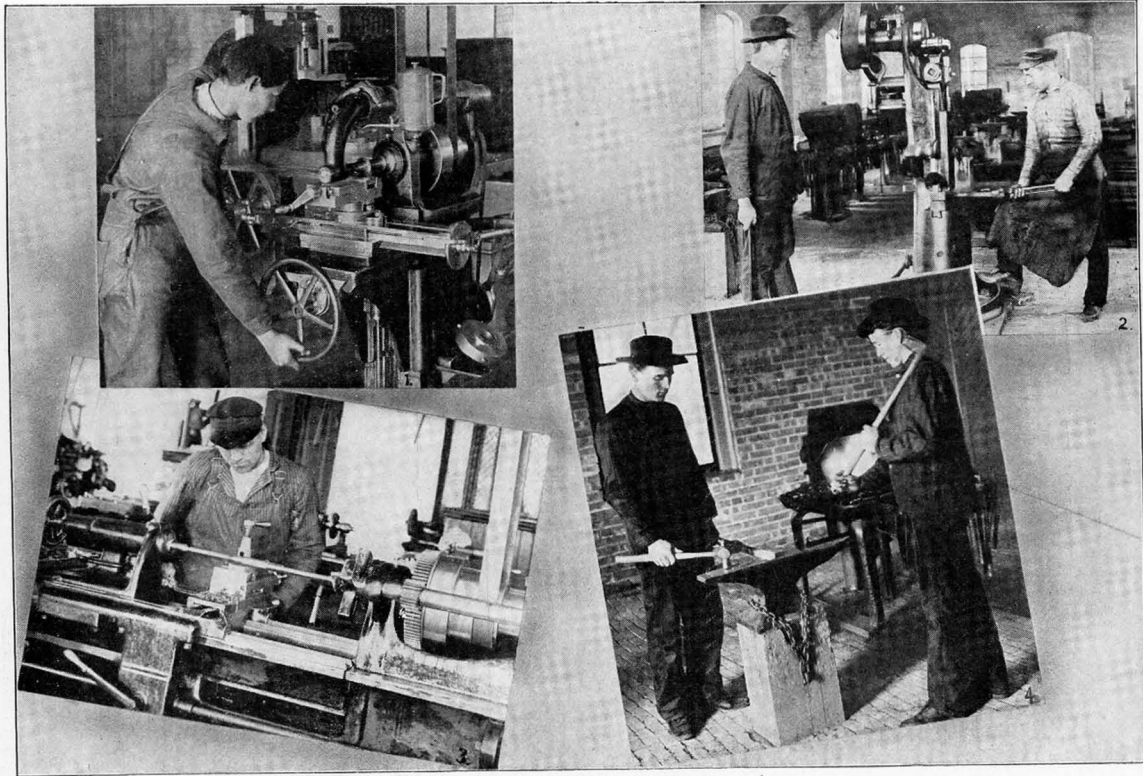
METAL WORKING MACHINE ROOM.



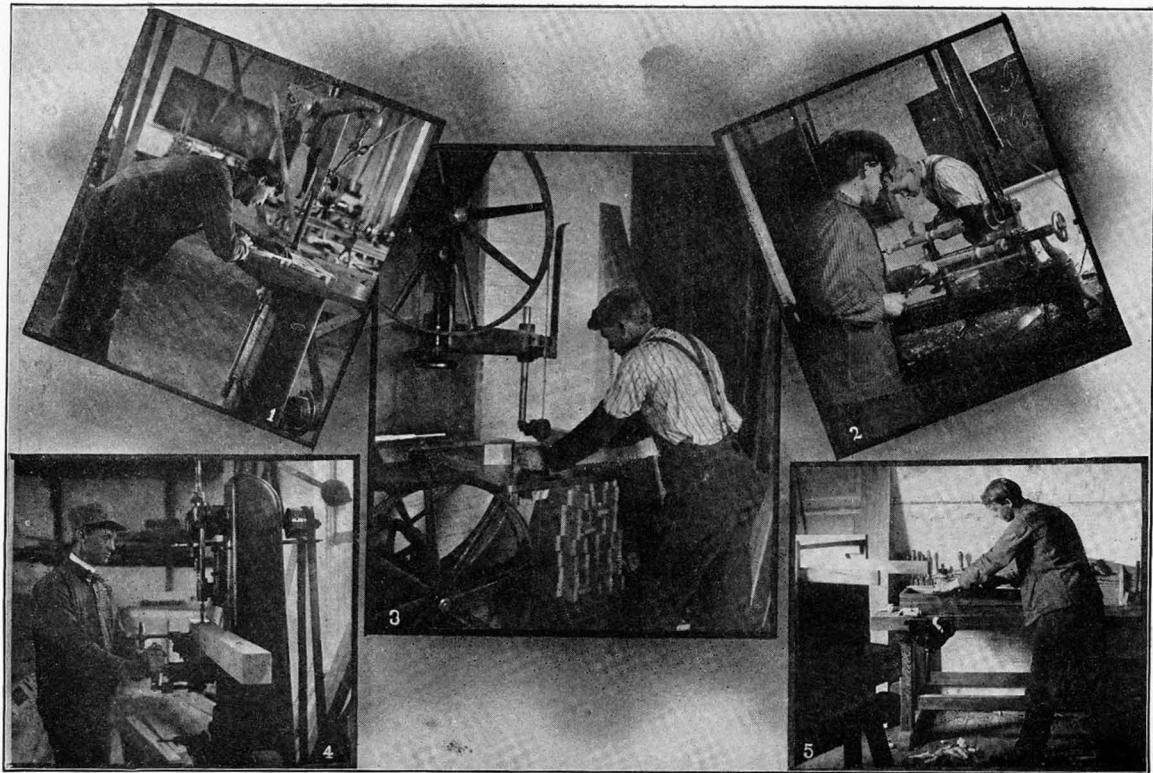
WOOD WORKING MACHINE ROOM.



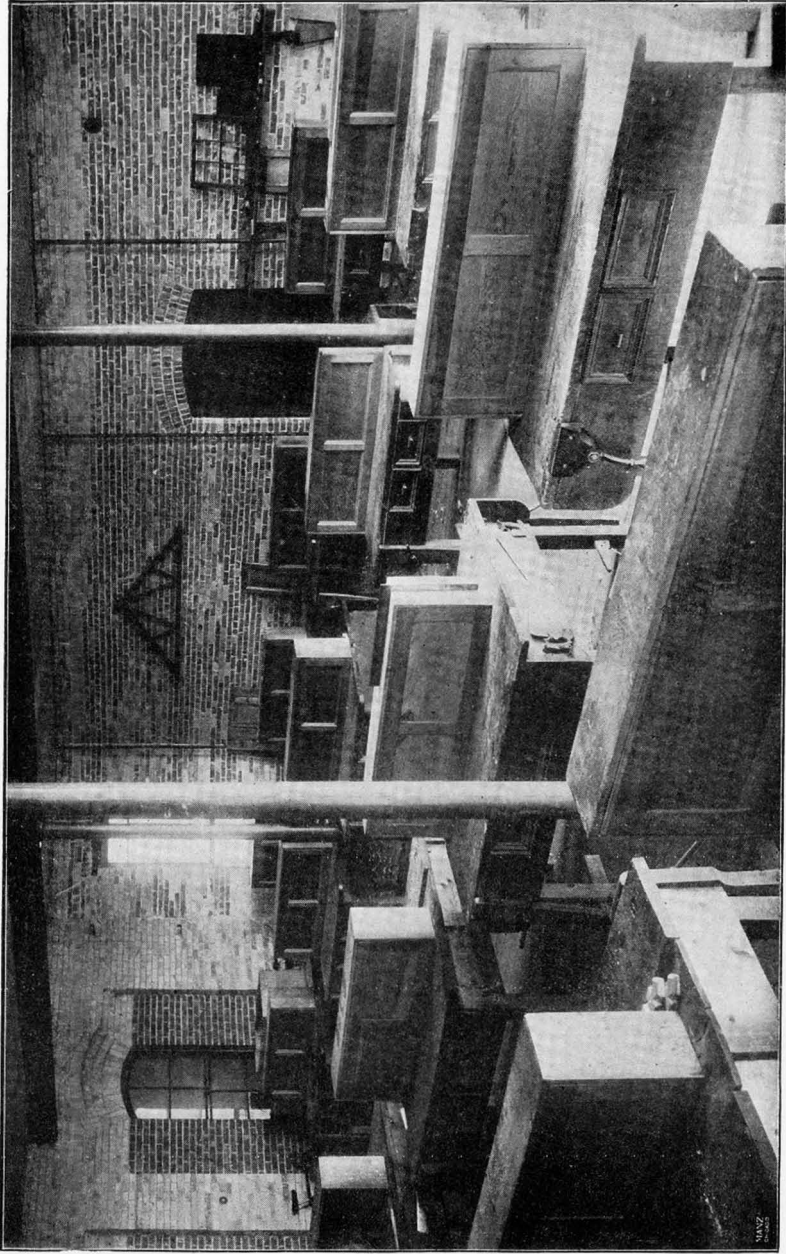
SAMPLE EXERCISES BY STUDENTS IN MECHANIC ARTS. FORGING
AND MACHINE WORK.



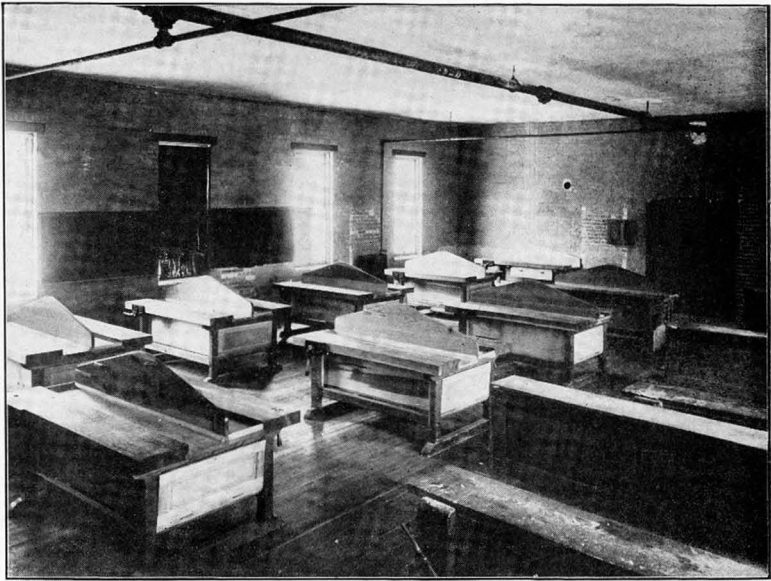
1. STUDENT AT MILLING MACHINE. 2. STUDENTS AT POWER HAMMER.
3. STUDENT AT LATHE. 4. STUDENTS AT FORGE.



1. STUDENT AT JIG SAW. 2. STUDENTS AT TURNING LATHES. 3. STUDENT AT BAND SAW.
4. STUDENT AT POWER MORTISER. 5. STUDENT AT BENCH.



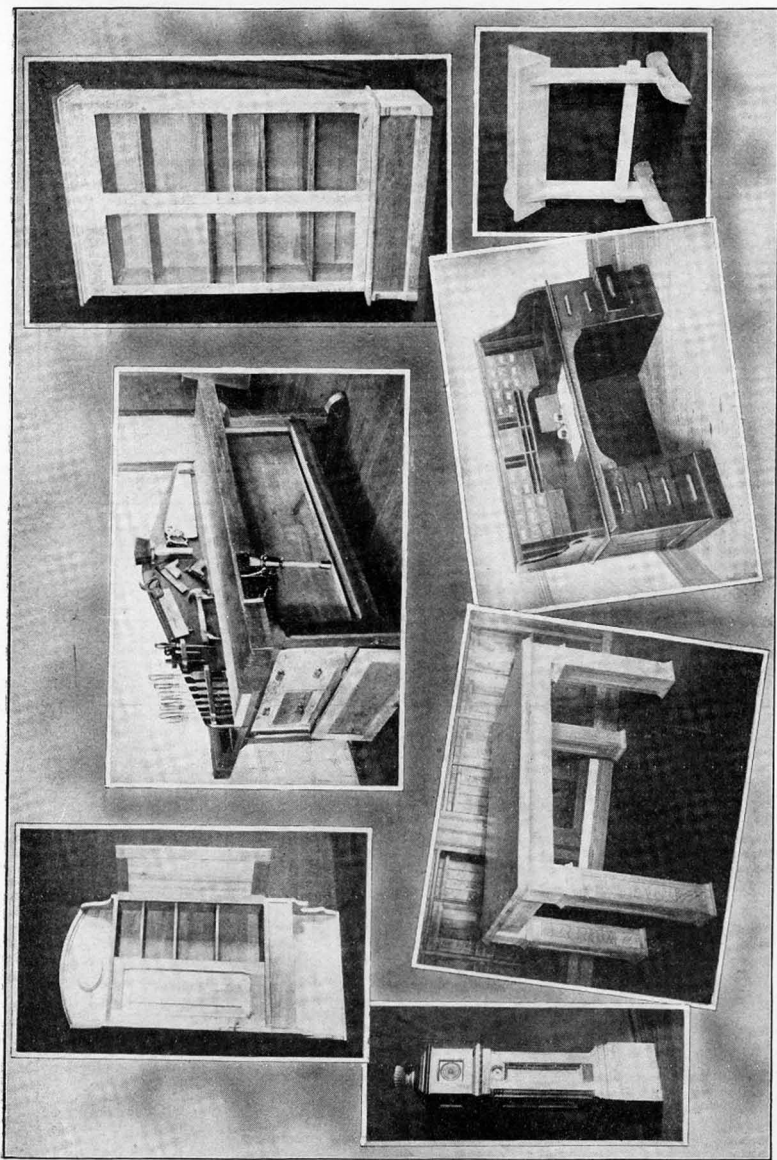
CARPENTER SHOP.



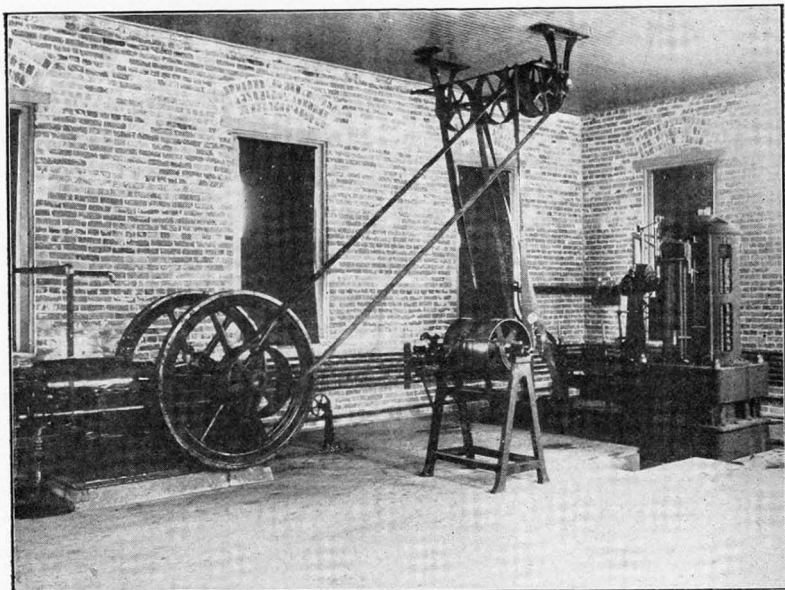
CARPENTER SHOP—CABINET WORK AND PATTERN-MAKING.



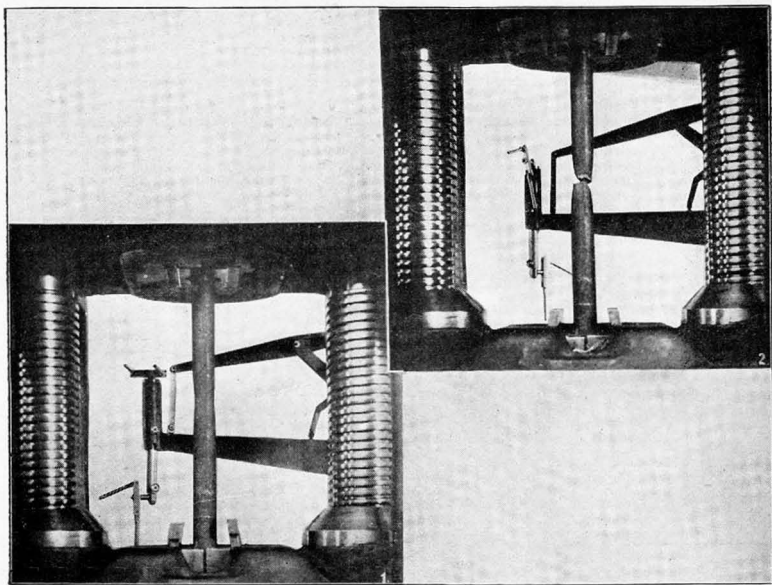
SAMPLE EXERCISES OF STUDENTS IN MECHANIC ARTS.



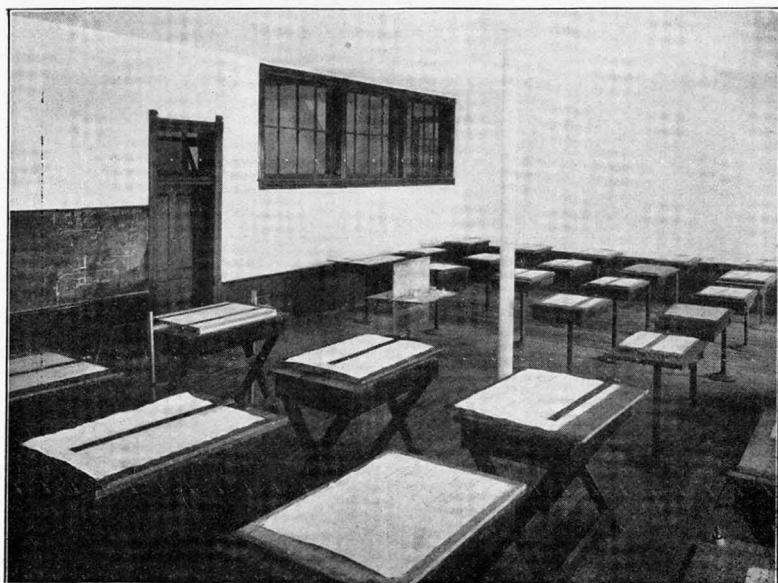
SAMPLE EXERCISES BY STUDENTS IN MECHANIC ARTS. WOOD WORK.



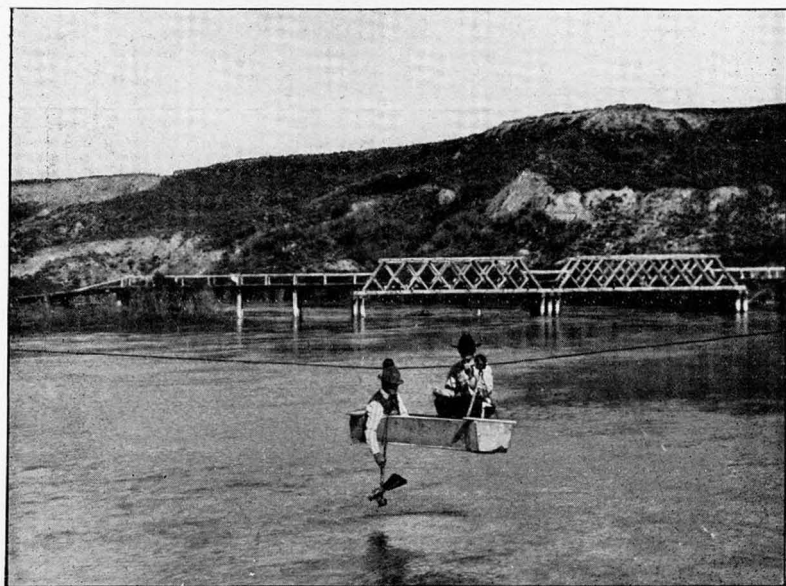
CORNER IN ENGINEERING LABORATORY, SHOWING 200,000 LB-CAPACITY TESTING MACHINE.



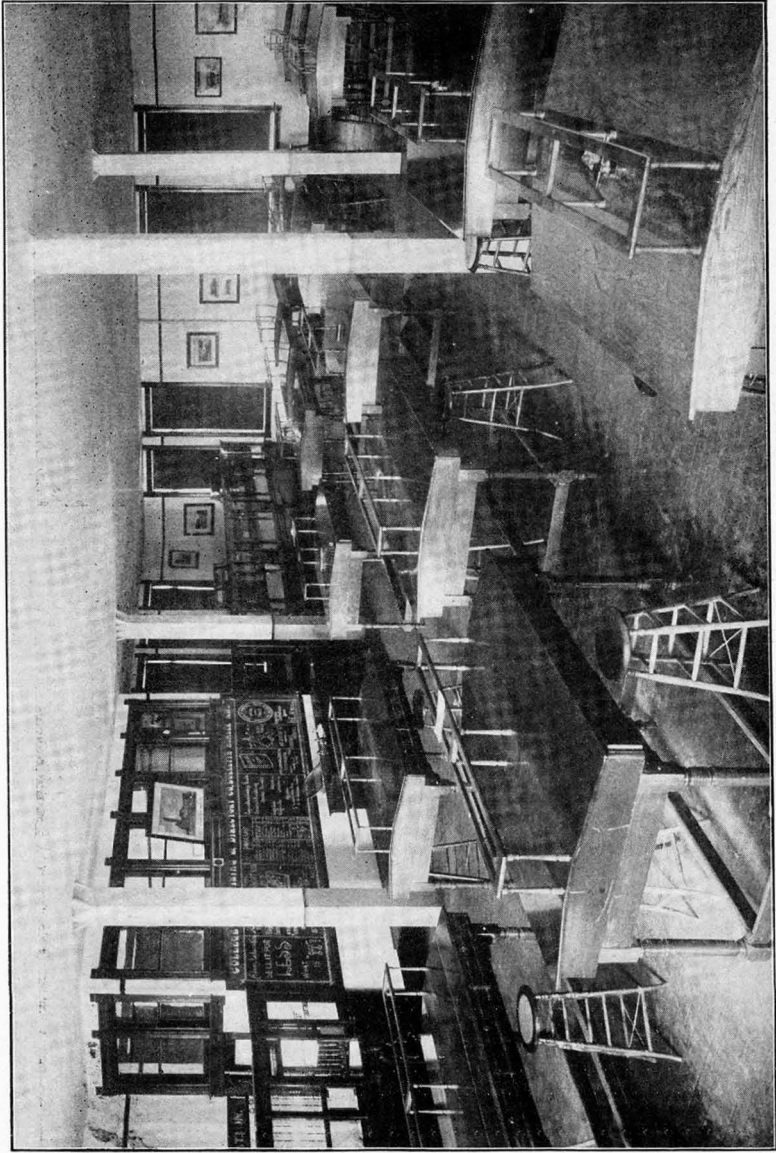
SPECIMEN IN TESTING MACHINE—BEFORE AND AFTER BEING BROKEN.



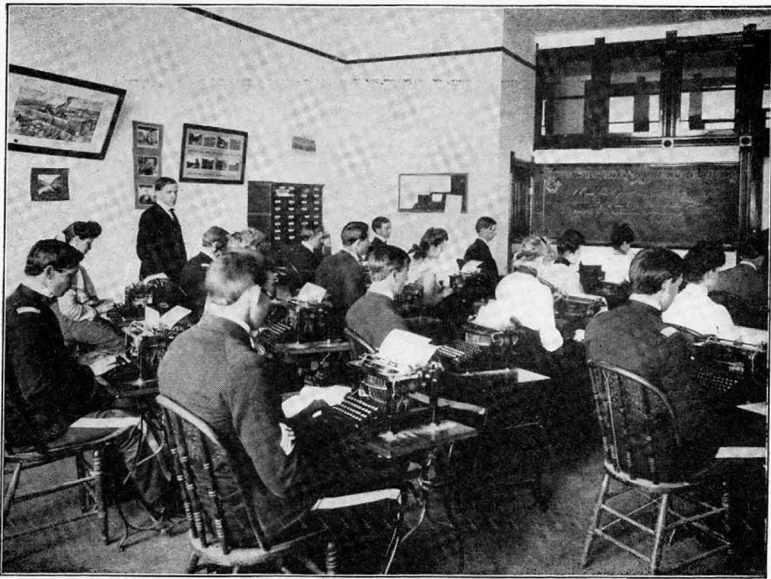
DRAUGHTING ROOM.



ENGINEERING STUDENTS MEASURING FLOW OF WATER.



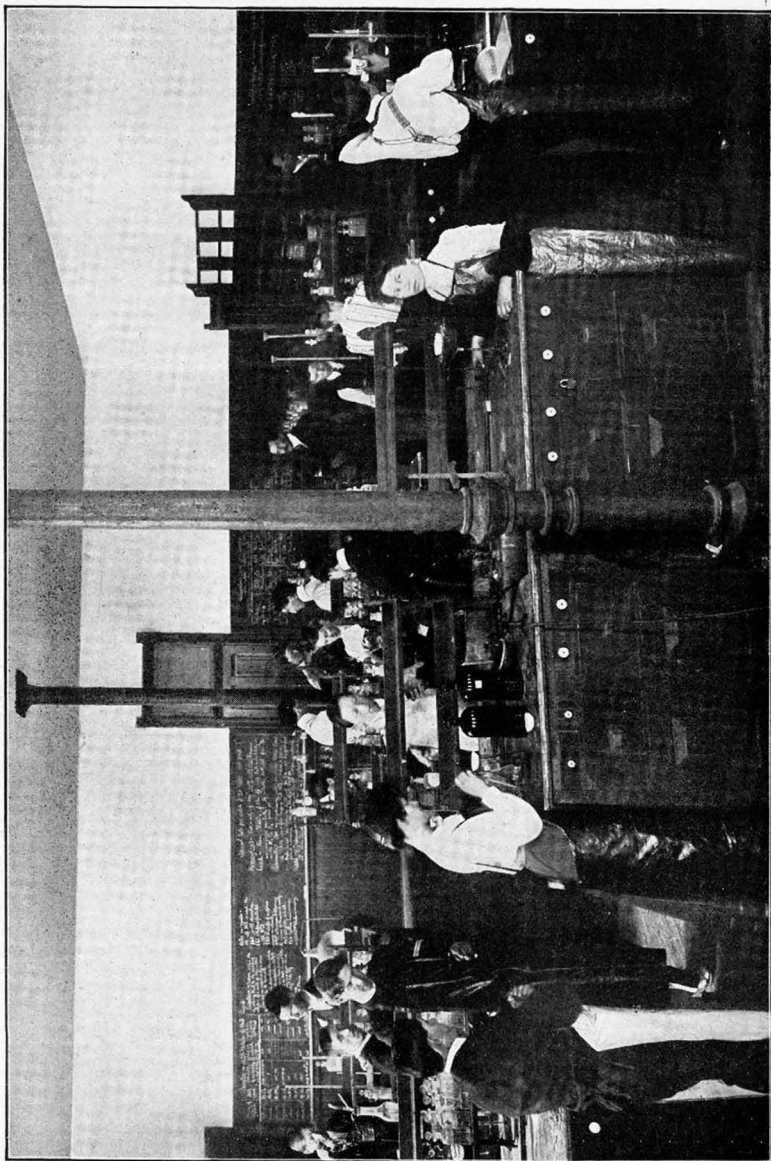
ACCOUNTING ROOM.



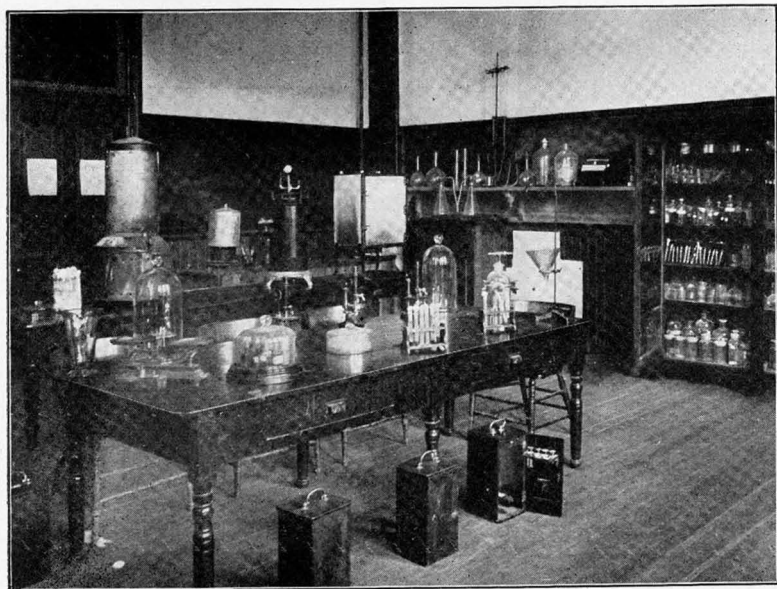
CORNER IN TYPEWRITING ROOM.



OFFICE AND COUNTER IN COMMERCIAL ROOMS.



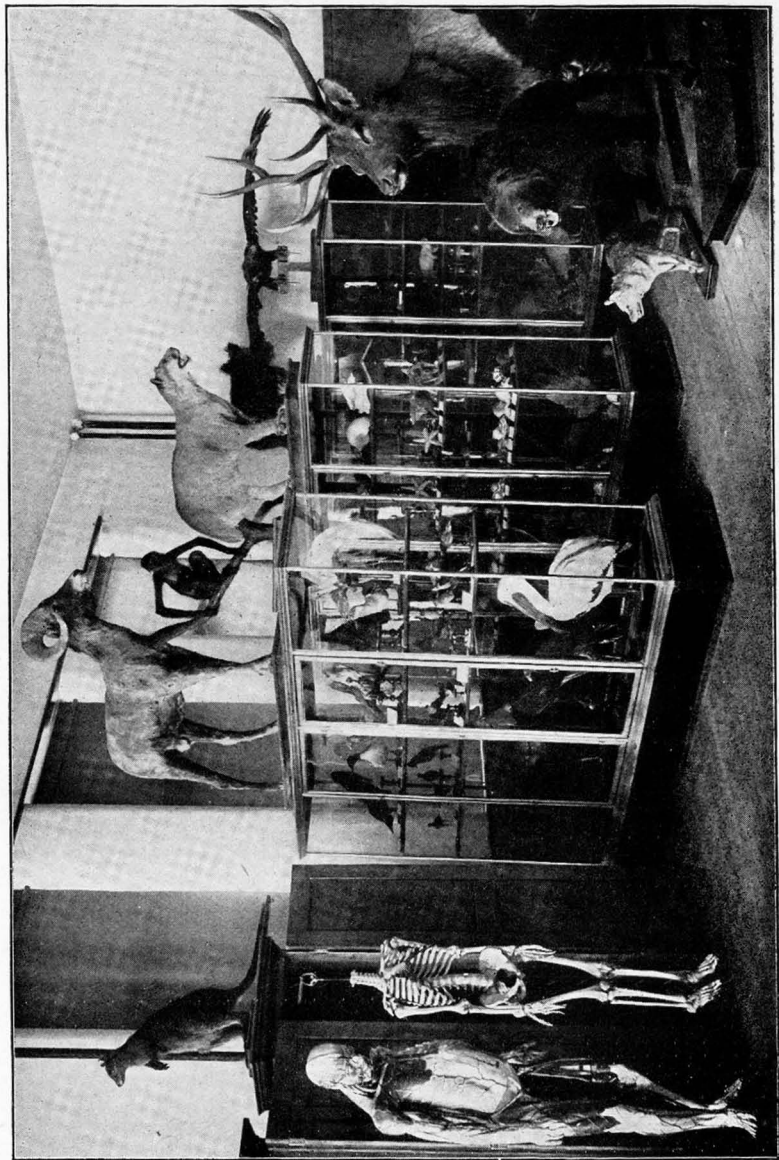
CHEMICAL LABORATORY.



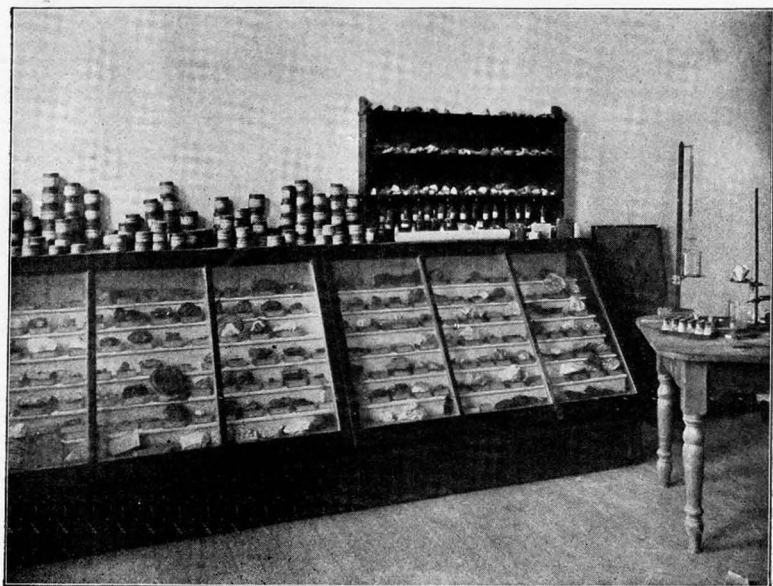
BACTERIOLOGICAL LABORATORY.



ZOOLOGICAL LABORATORY.



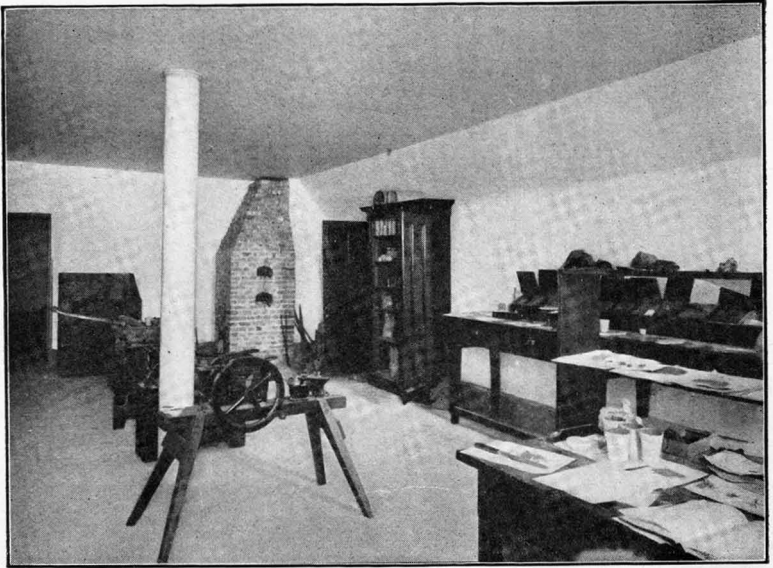
CORNER IN ZOOLOGICAL MUSEUM.



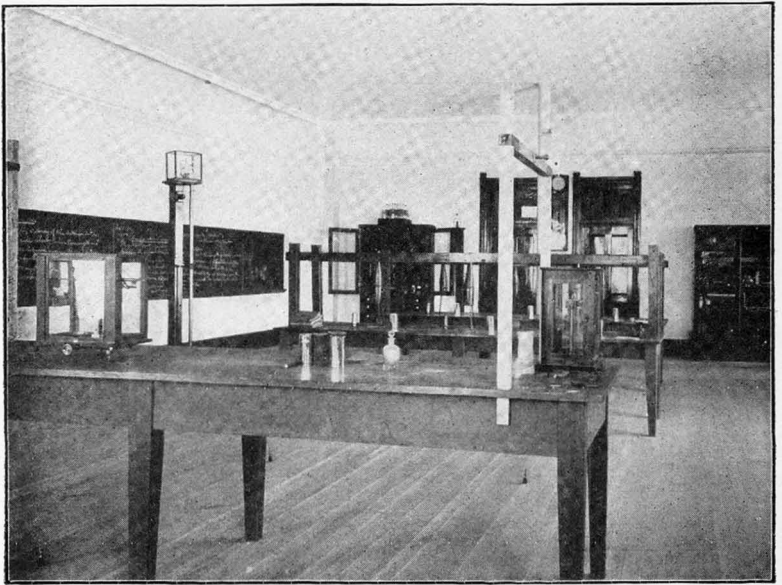
SECTION OF MINERALOGICAL LABORATORY.



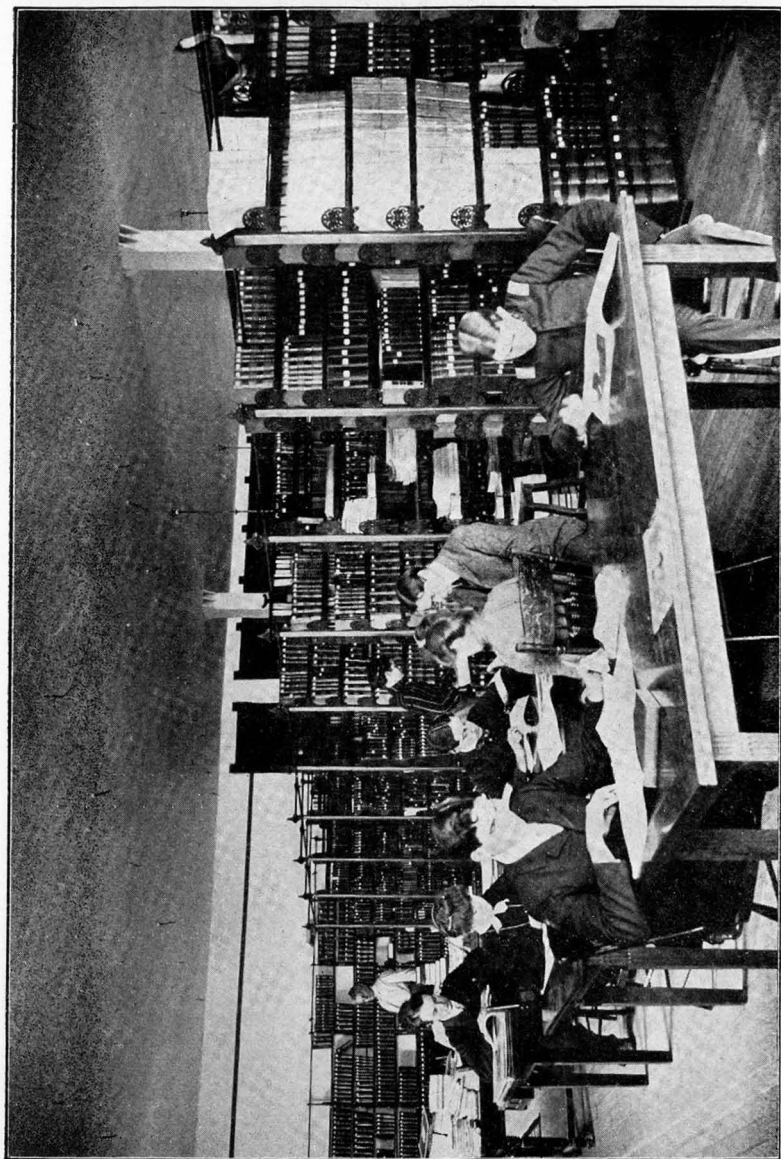
SECTION OF MINERALOGICAL MUSEUM.



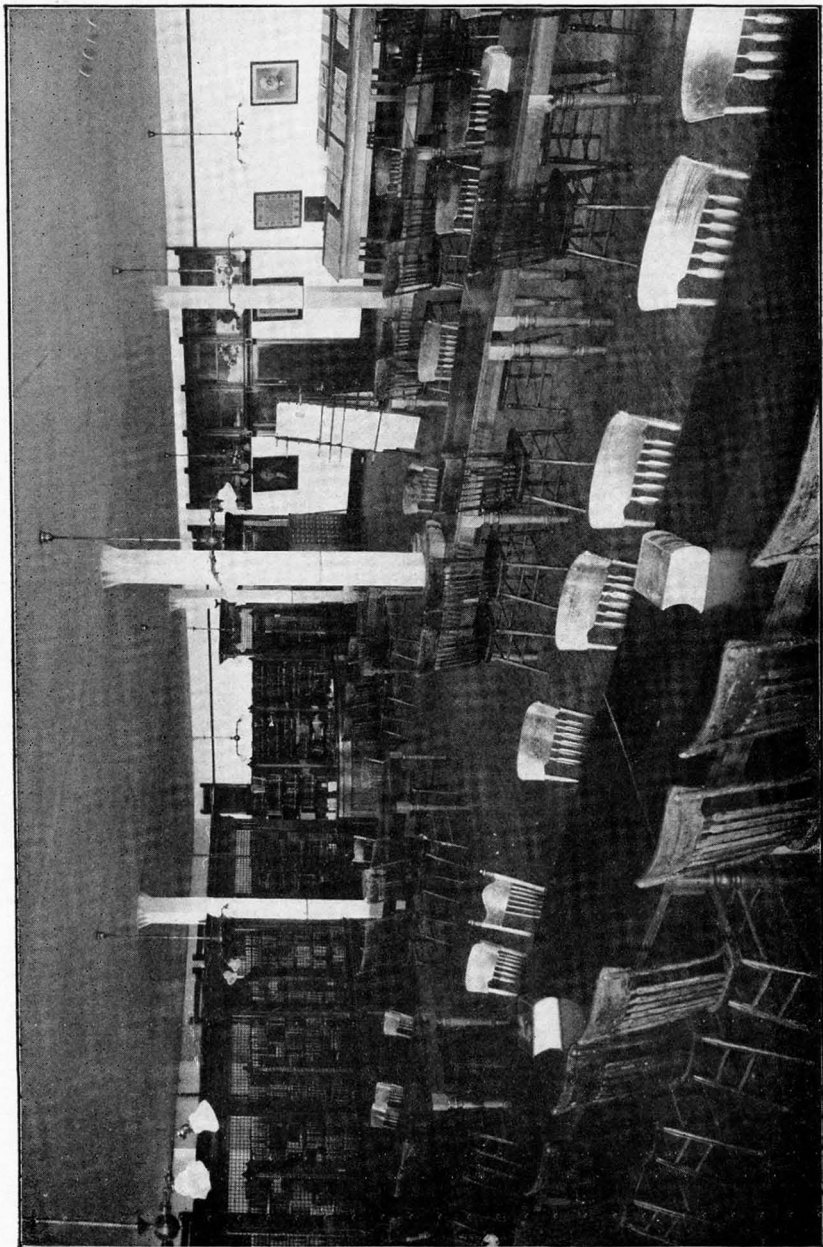
CORNER IN ASSAYING ROOM.



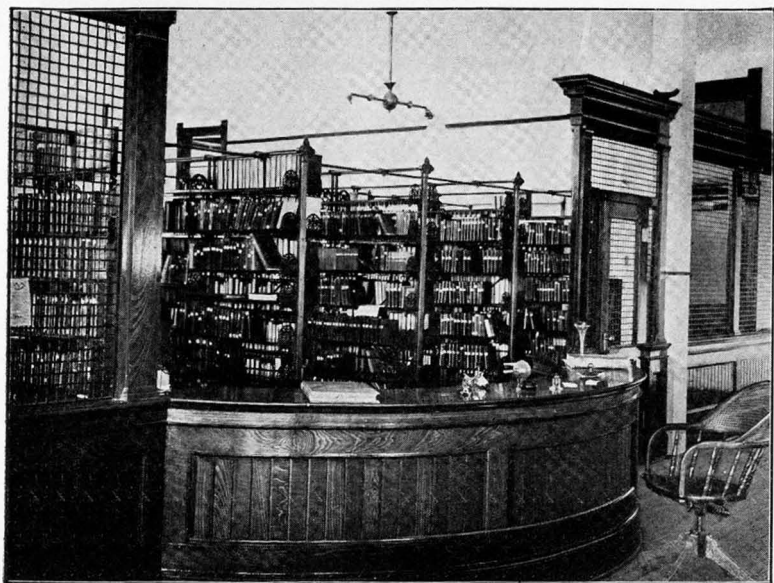
PHYSICAL LABORATORY.



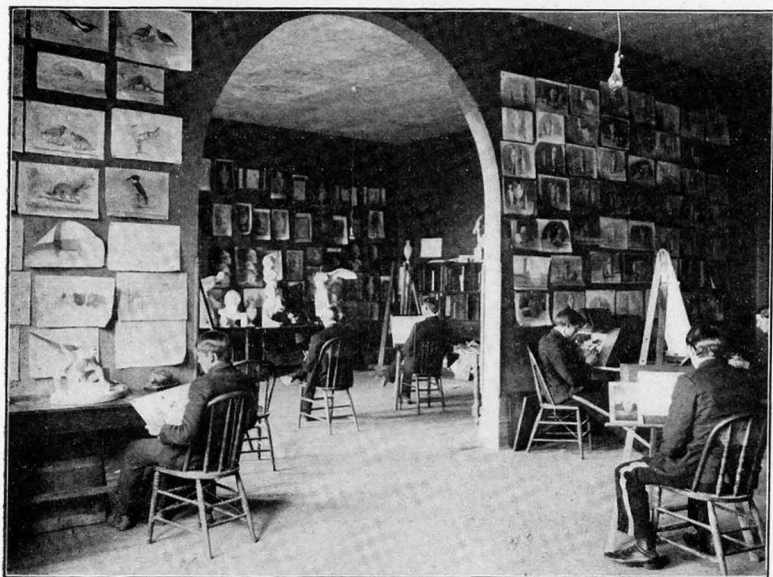
STACK ROOM, COLLEGE LIBRARY.



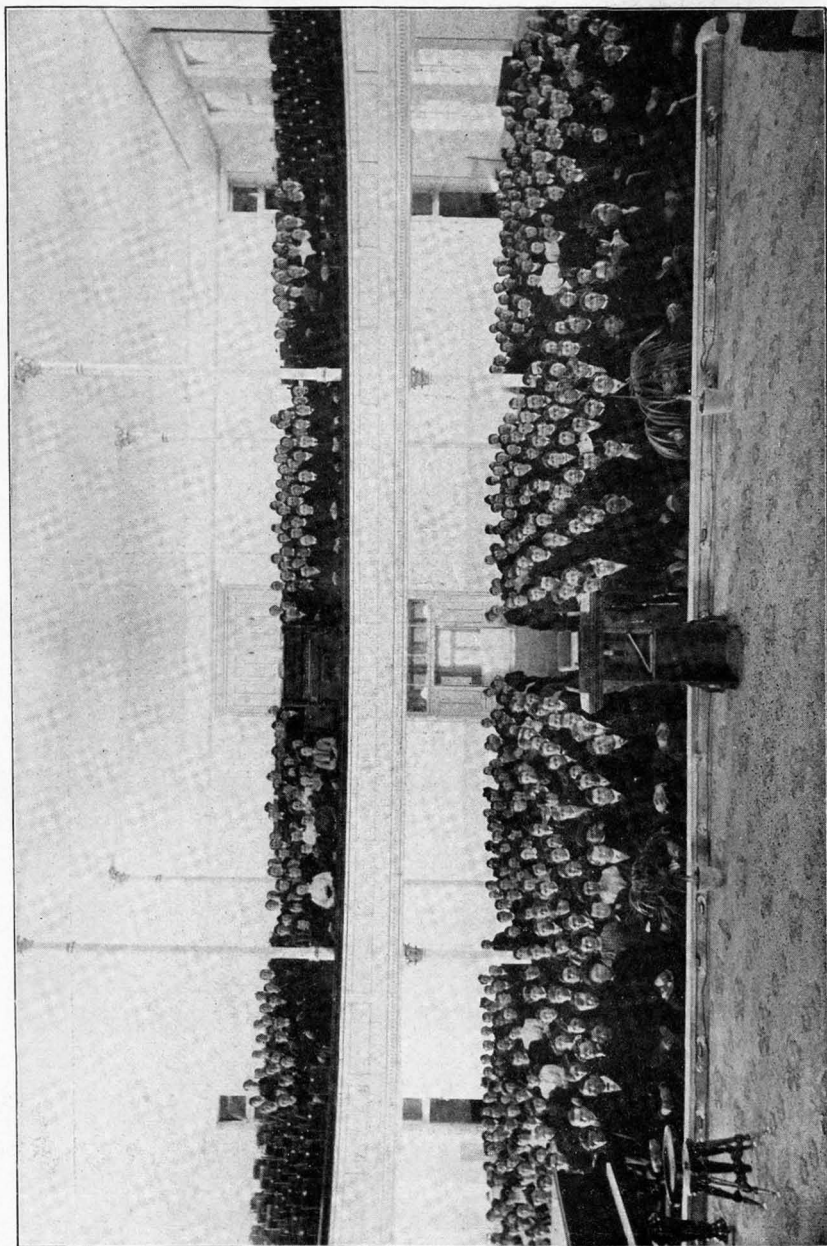
READING ROOM, COLLEGE LIBRARY.



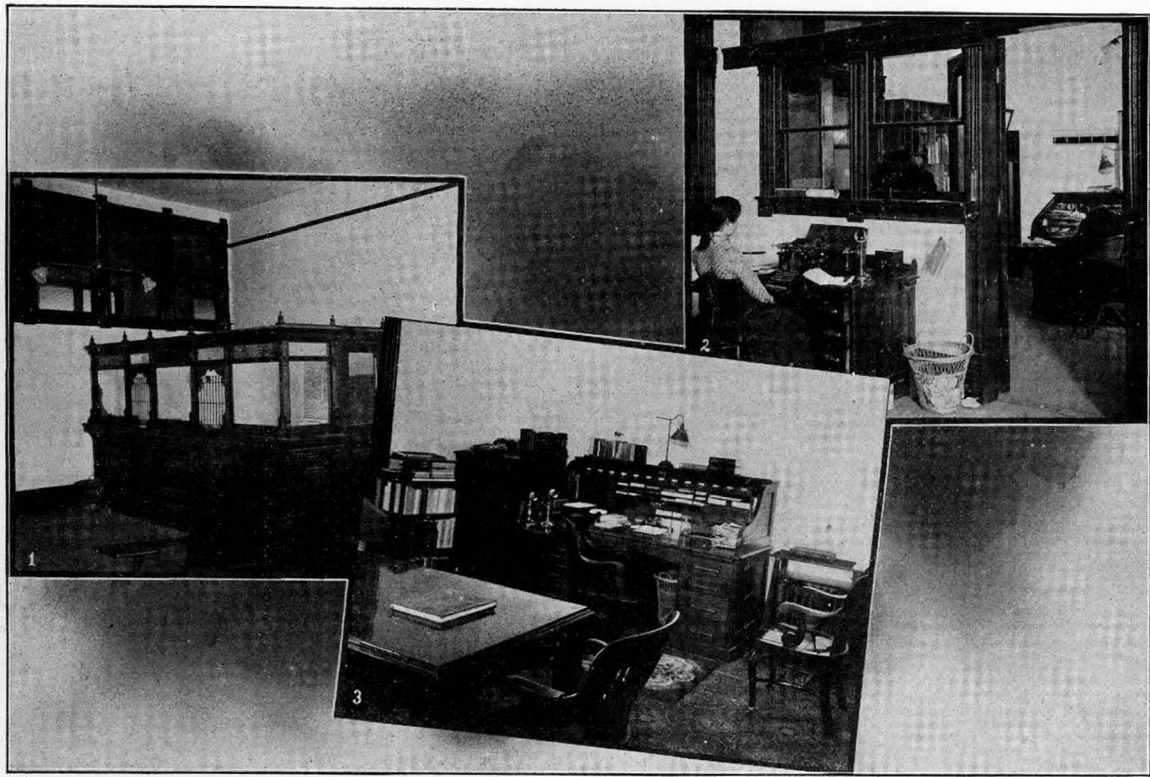
DELIVERY COUNTER, COLLEGE LIBRARY.



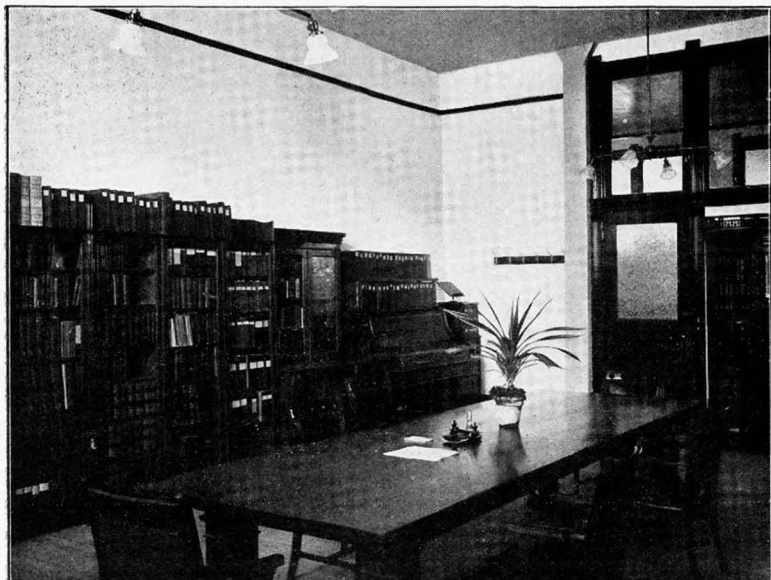
ART ROOMS.



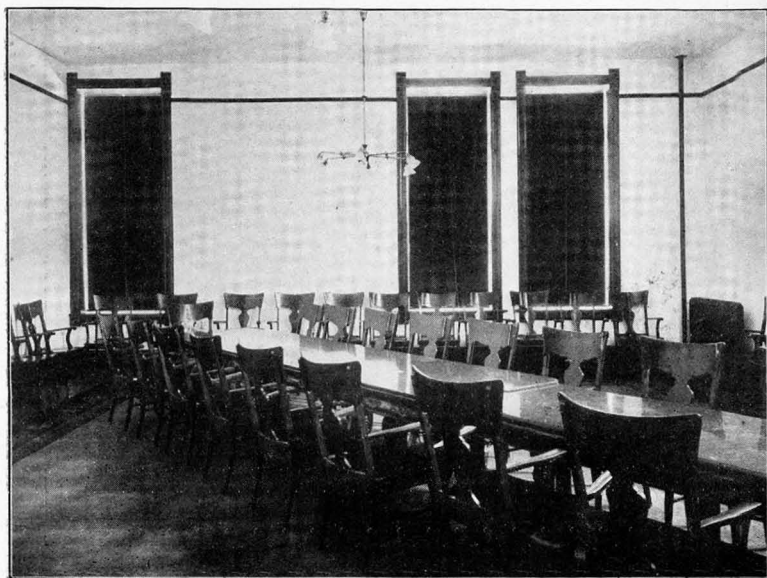
COLLEGE AUDITORIUM.



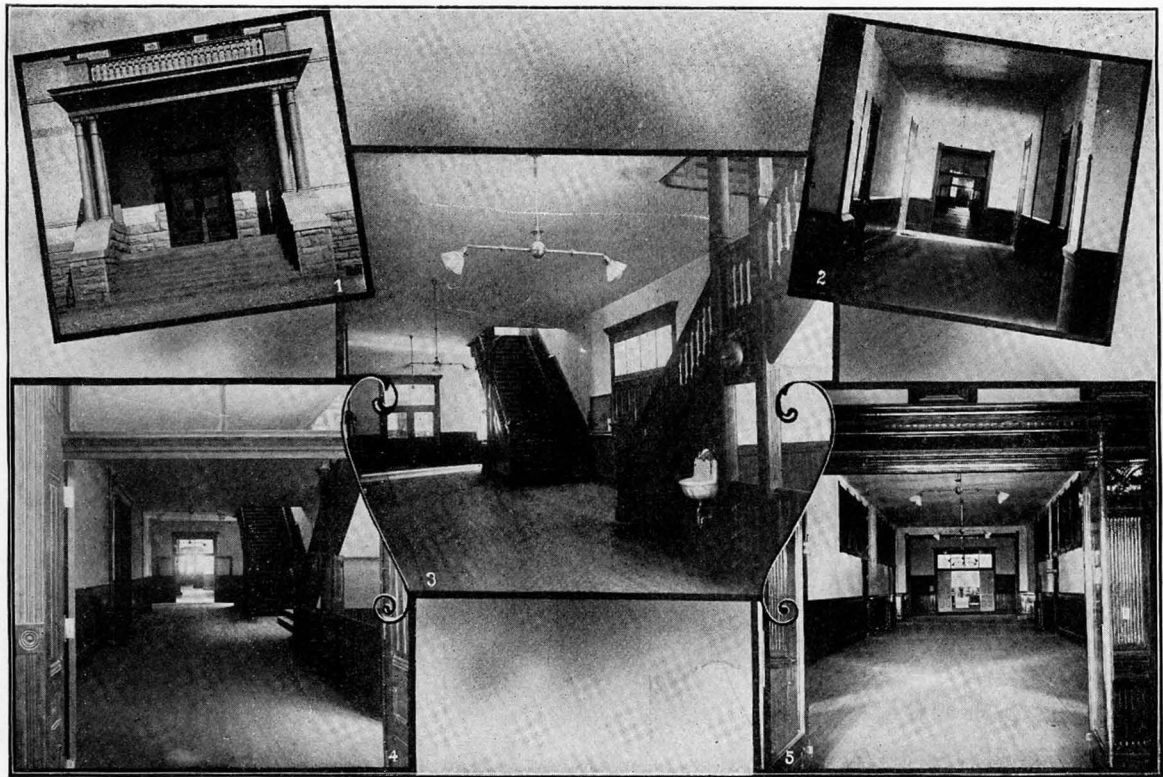
I. REGISTRAR'S OFFICE. 2. SECRETARY'S OFFICE. 3. PRESIDENT'S PRIVATE OFFICE.



PRESIDENT'S OFFICE.



FACULTY ROOM.



1. ENTRANCE TO MAIN BUILDING. 2. CORRIDOR, MAIN BUILDING, FIRST FLOOR. 3. CORRIDOR AT
ENTRANCE TO AUDITORIUM. 4. CORRIDOR, MAIN BUILDING, SECOND FLOOR.
5 CORRIDOR, NEW FRONT OF MAIN BUILDING.



FRONT OF MAIN BUILDING.



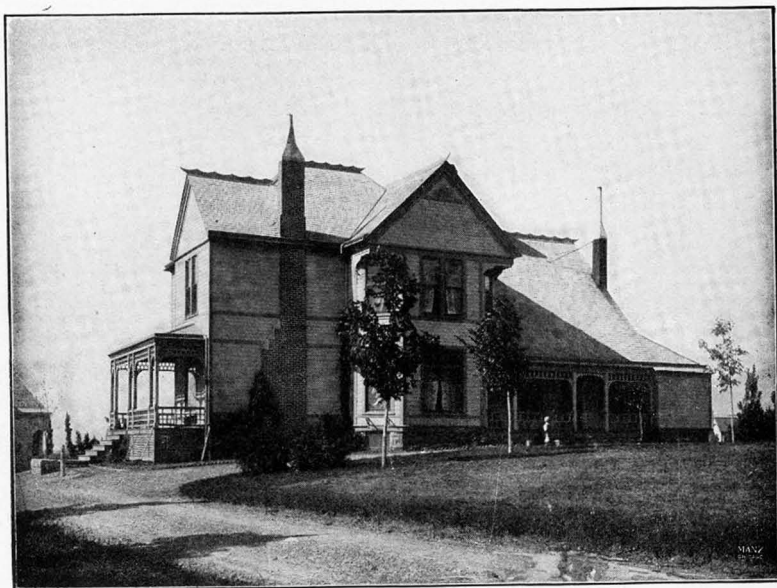
COLLEGE DORMITORY.



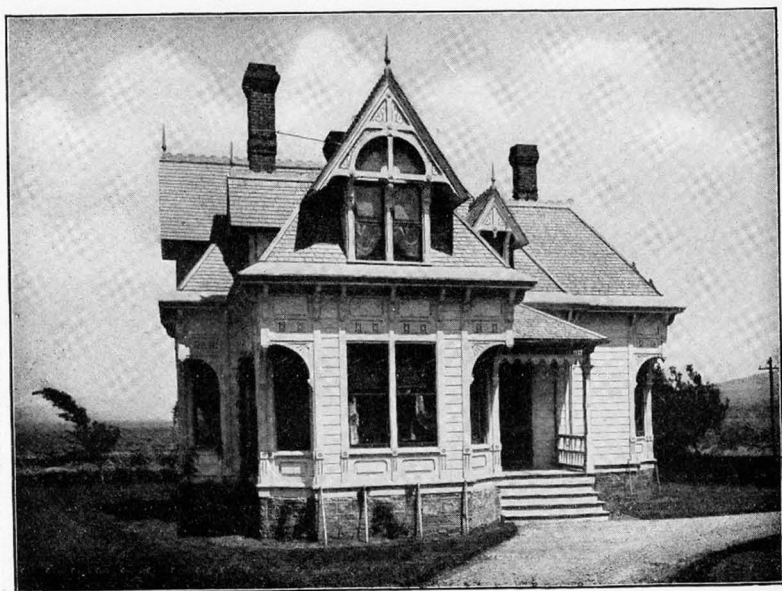
RECEPTION ROOM—COLLEGE DORMITORY.



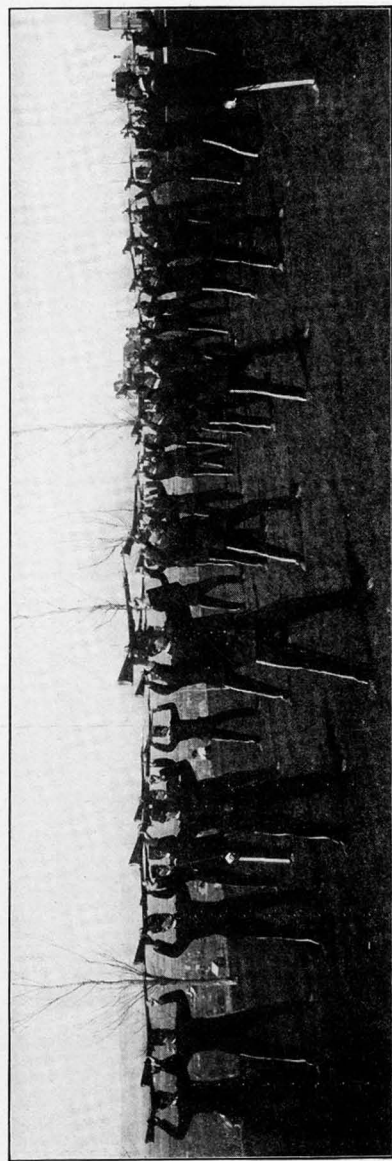
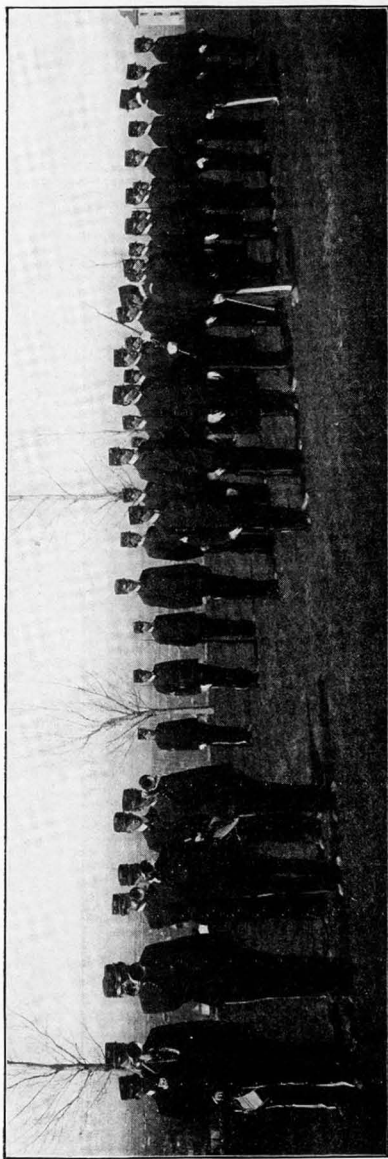
STUDENT'S ROOM—COLLEGE DORMITORY.



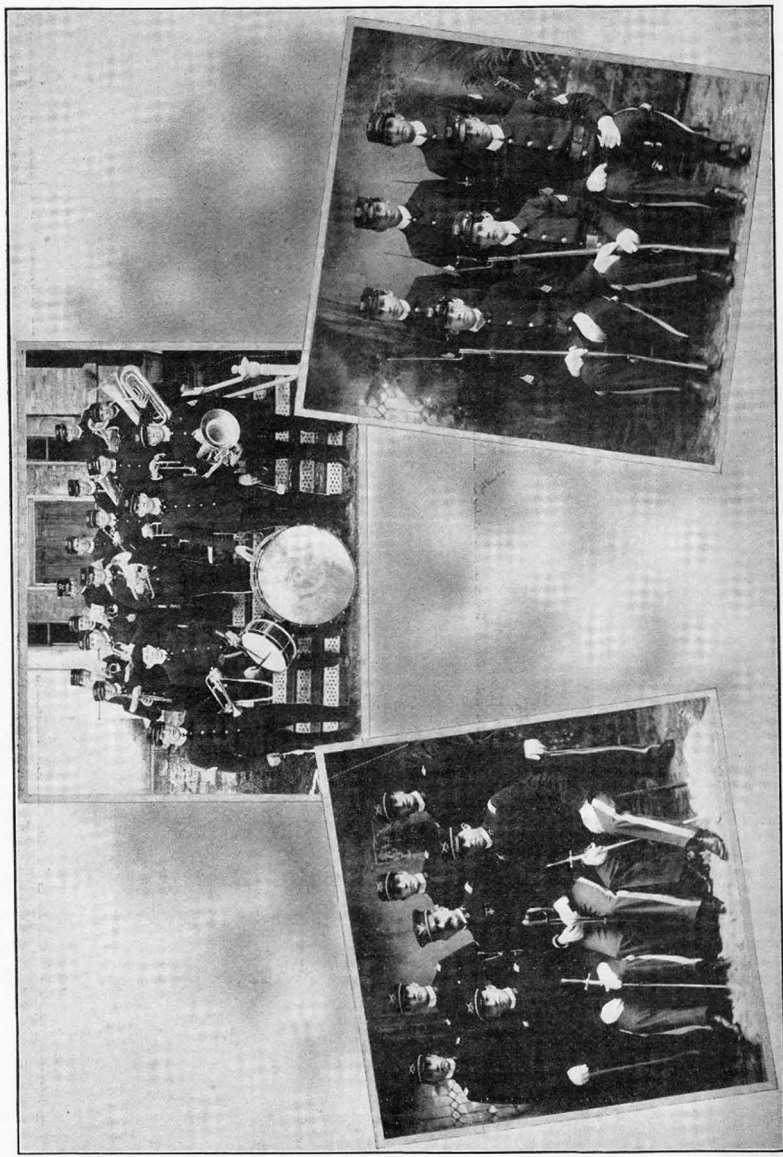
RESIDENCE OF THE PRESIDENT.



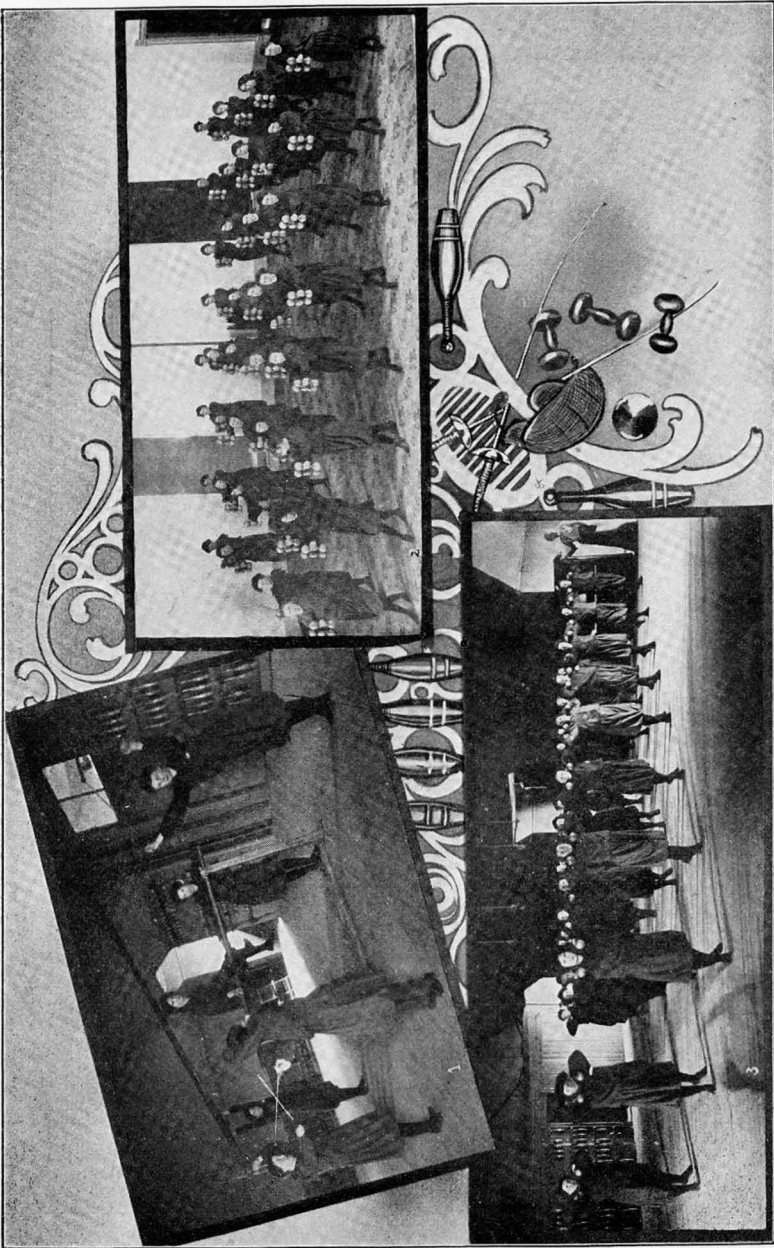
RESIDENCE OF DIRECTOR OF EXPERIMENT STATION.



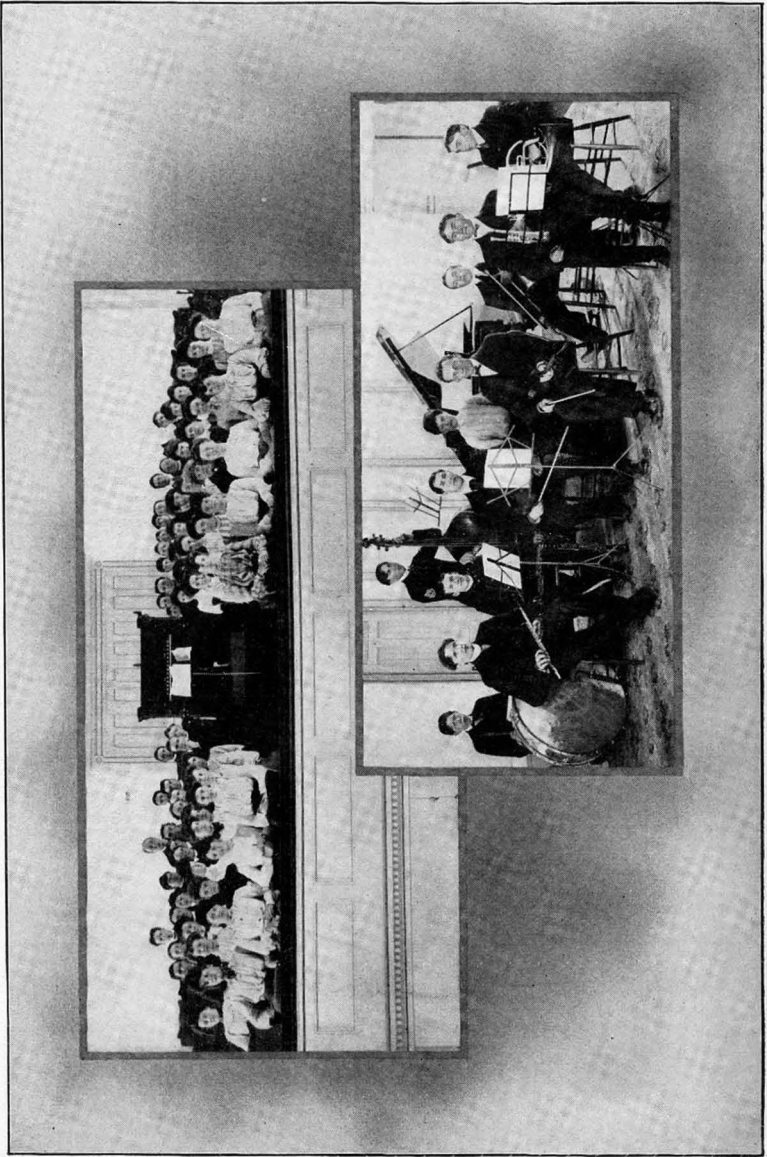
VIEWS OF COLLEGE CADETS. 1. INSPECTION. 2. BAYONET EXERCISES.



MILITARY OFFICERS AND BAND.



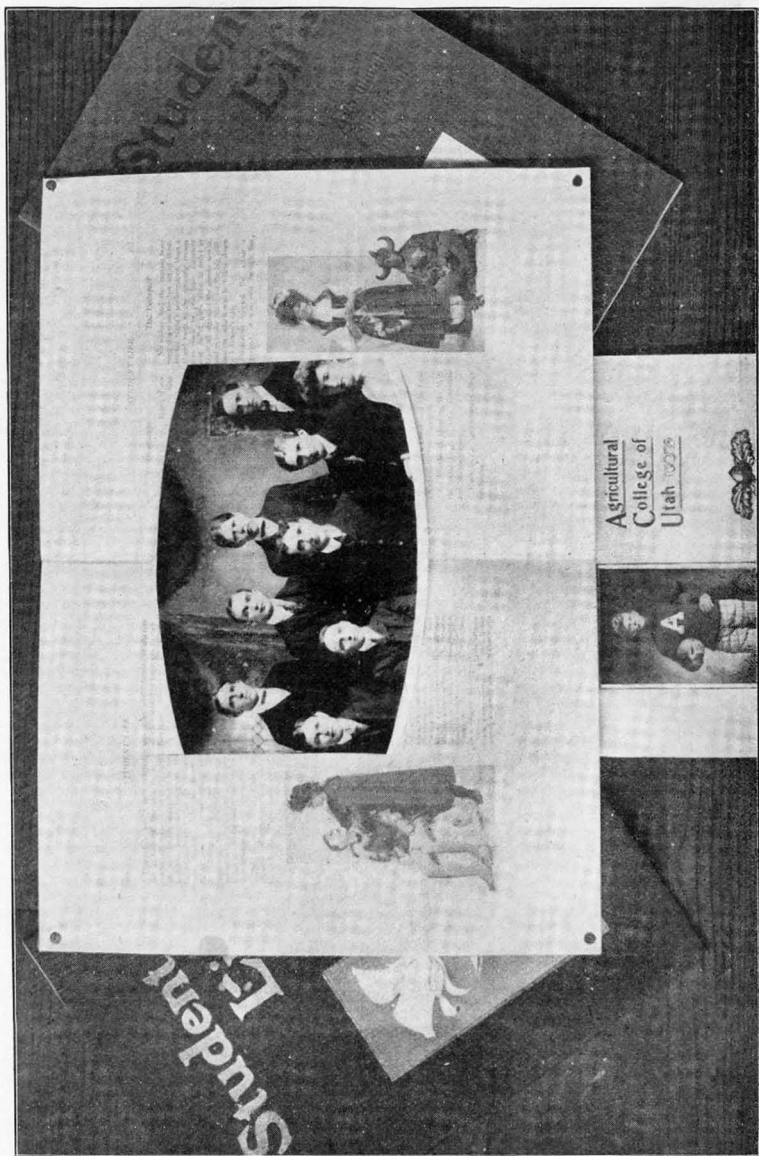
PHYSICAL CULTURE.



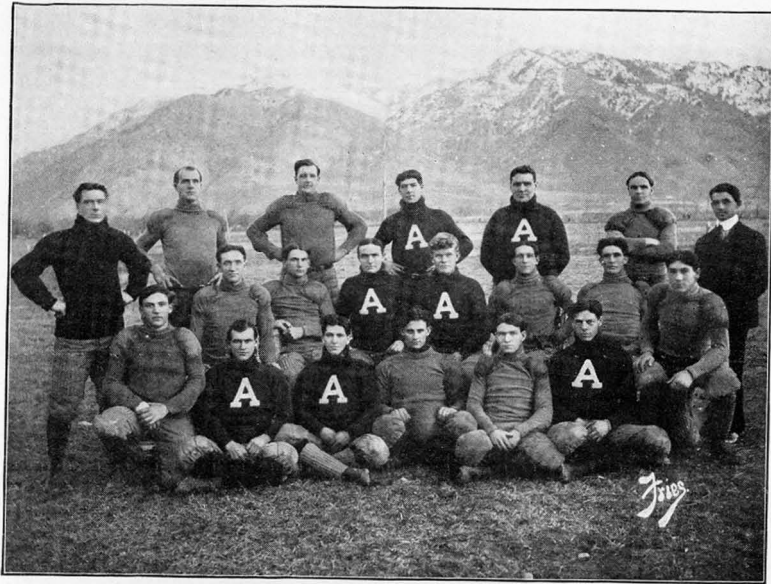
COLLEGE CHOIR AND ORCHESTRA.



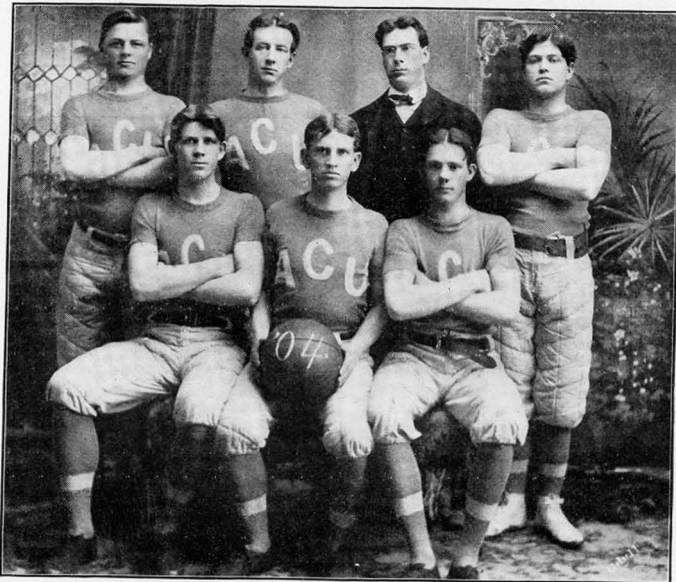
FLASH-LIGHT FROM STUDENT PRODUCTION OF "AS YOU LIKE IT."



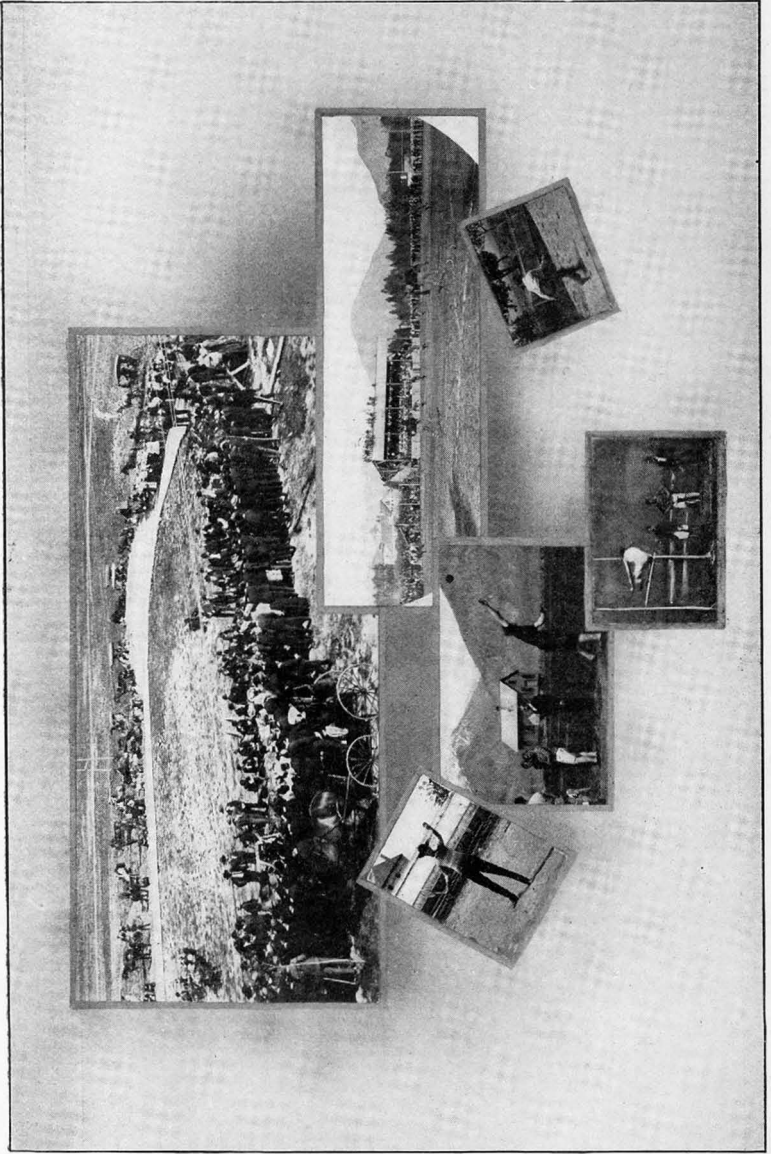
STAFF OF STUDENT LIFE.



COLLEGE FOOTBALL TEAM.



COLLEGE BASKET BALL TEAM.



COLLEGE ATHLETICS.

AGRICULTURAL COLLEGE OF UTAH.

General Information.

The Agricultural College of Utah constitutes part of the public school system of the State. It comprises five different schools,—the School of Agriculture, the School of Domestic Science and Arts, the School of Commerce, the School of Engineering and Mechanic Arts, and the School of General Science; also the Agricultural Experiment Station, which, while not providing directly for instructional work, is one of the most important departments of the institution. The organization, purpose, and equipment of the College, together with the character and extent of the work offered, are described, so far as the limits of space will allow, in the following statements and schedules.

FOUNDATION AND ENDOWMENT.

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," from the sale of which lands there should be established a perpetual fund, "the interest of which shall be inviolably appropriated, by each state which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies and including military tactics.

to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." The Act forbids 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. The states accepting the provisions of the Act are required to provide for the construction and maintenance of the necessary buildings, and for the expenses of administration in carrying out the purpose of the Act.

On March 8, 1888, the Utah Legislative Assembly accepted the national law, and, in accordance with its provisions, founded the Agricultural College of Utah. The amount of public lands granted to this institution, under the provisions of the Act of Congress, was 90,000 acres; but by the terms of the Enabling Act, passed by Congress and approved July 16, 1894, providing for the admission of Utah as a state, the amount was increased to 200,000 acres.

Under an Act of Congress, approved March 2, 1887, the College receives \$15,000 annually for the maintenance of the Agricultural Experiment Station, "to aid in acquiring and diffusing among the people useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science."

Under an Act of Congress, approved August 30, 1890, the College receives \$25,000 annually, "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their application to the industries of life."

In addition to the income from the national government and from the land grant fund, the College is dependent upon the State Legislature for such appropriations as are needed to meet the requirements of the several departments in accordance with the pro-

visions of the Acts of Congress, and to provide for the further development of the institution consistent with the educational and industrial demands of the state.

HISTORY.

In 1888, the Legislature appropriated \$25,000 for buildings, and the county of Cache and the city of Logan gave one hundred acres of land on which to locate the College. Plans were prepared for the Main Building, and part of the south wing was completed. In September, 1890, the institution was first opened for the admission of students. Regular courses were offered in Agriculture, Domestic Arts, Civil Engineering, Mechanic Arts, and Commerce; also a Preparatory course, and special courses in Agriculture, Mining Engineering and Irrigation Engineering.

The Legislature of 1890 appropriated \$48,000 for the construction of an Experiment Station Building, two laborers' cottages, and a farm house, and for the purchase of apparatus and the employment of administrative officers. The Legislature of 1892 provided \$108,000 with which the south wing, the north wing, and part of the center of the Main Building were completed; rooms in the basement were provided with machinery and other facilities for shopwork; the scientific laboratories were more thoroughly equipped; and other additions were made which added greatly to the facilities of the institution for advanced work. In 1894, additional apparatus was provided, and a forcing house and a veterinary laboratory were constructed. In 1896, the Legislature passed a law providing an annual appropriation to the College of \$1500 for the purpose of holding Farmers' Institutes in the different counties of the State. During this year, part of the Mechanic Arts Building was completed, and the forge shops were removed from the Main Building. In 1897, the Legislature made an appropriation for the maintenance of a Manual Training School, and for the extension of the Mechanic Arts Building, pro-

viding rooms for the chemical laboratories and the carpentry and machine shops; manual training courses were established in Mechanic Arts and Domestic Arts. In 1899, a greenhouse was constructed and equipped. In 1900, a department of art was established, additional class rooms were furnished, the several departments throughout the institution were more thoroughly organized, and other improvements were made, adding to the facilities for thorough and efficient work. The Legislature of 1901 appropriated \$108,200 for general maintenance and various improvements, including the completion of the front of the Main Building, the construction of model farm buildings and a vegetation house, and the purchase of further apparatus, and of additional land for work in irrigation investigations.

In March, 1901, the Sub-Freshman course and the elementary courses in Agriculture and Commerce were abolished, and regular three-year courses of high school grade were established in Agriculture, Domestic Science, and Commerce, each leading to a certificate of graduation. The Manual Training Course in Mechanic Arts was increased from three to four years, and the Manual Training Course in Domestic Arts was increased from two to three years. An additional year's work was prescribed for admission to the baccalaureate courses, thereby raising the standard of the regular College work one year. These College courses in Agriculture, Domestic Science, Commerce, Engineering, and General Science, were made co-ordinate and were more clearly differentiated from the elementary or high school courses.

The Legislature of 1903 appropriated \$110,975 for general maintenance and for additional buildings and equipment. An appropriation of \$12,500 was also made for experimental work in dry farming, to be conducted by the College in different parts of the state. In March, 1903, the Board of Trustees established five schools: the School of Agriculture, the School of Domestic Science and Arts, the School of Engineering and Mechanic Arts, the School of Commerce, and the School of General Science. The College Council was also established and a more complete organization effected throughout all the departments of the institution.

GOVERNMENT.

The government of the College is vested primarily in the Board of Trustees, and, under their control, in three other administrative bodies,—the College Council, the College Faculty, and the Staff of the Experiment Station. These, in their several capacities, determine the policy and maintain the efficiency of the institution.

THE BOARD OF TRUSTEES consists of seven members, appointed by the Governor with the approval of the State Senate. This board assumes the legal responsibility of the institution, cares for its general interests, and directs its course by the enactment of all necessary by-laws and regulations. Vested in it is the power to establish professorships and to employ the instructing force and other officers of the College.

STANDING COMMITTEES OF THE BOARD OF TRUSTEES. Between sessions, the power of the trustees rests with an executive committee, whose actions are referred to the Board for their approval. Another committee is concerned with the funds and accounts of the College, while a third has general charge of all building and repairs throughout the institution. In addition to these, there are committees, largely advisory, having to do with the employment and service of College officers, and with the work of particular departments.

THE COLLEGE COUNCIL consists of the President of the Board of Trustees, the President of the College, and the professors, the associate professors, and the assistant professors. All the important questions of discipline and policy are considered by this body. Its duties extend to the arrangement and correlation of courses of study, the requirements for admission and graduation in the several courses, and the final measures of discipline in cases of flagrant violation of College rules.

THE STANDING COMMITTEES OF THE COUNCIL are, with two exceptions, representative of the several schools of instruction in

the College. They have charge of the enrollment and progress of students in the respective schools, and have general direction of the work there carried on. The Committee on Scholarship and Graduation investigates the records of all candidates for certificates and degrees, and makes recommendations to the Council. To another committee of the Council is delegated the duty of arranging and carrying on Farmers' Institutes throughout the State.

THE COLLEGE FACULTY includes the President, the professors, the associate professors, the assistant professors, the librarian, the instructors, and the assistants. As an administrative body it is concerned with the ordinary questions of methods and discipline and with various matters pertaining to the general welfare of the College. Through its standing committees it is in more intimate contact with the student body and with the life and interests of the college community.

THE STANDING COMMITTEES OF THE FACULTY have delegated to them the immediate direction of various phases of college life. The conduct of the student in his college home and his regularity in performing college duties; the publications of the College and the students; the interests of the students on the athletic field, in the amusement halls, and in their various organizations—all these things are within the province of appropriate committees experienced in the management of such matters.

THE EXPERIMENT STATION STAFF consists of the President of the College, the Director of the Station, and the chiefs, with their assistants, of the departments of Agronomy, Horticulture, Animal Industry, Entomology, Chemistry, Irrigation Engineering, and Poultry Culture. This body is employed in the investigation of problems peculiar to agriculture in this portion of the country, the purpose being to improve conditions and results. It is further responsible for the circulation, through private correspondence and regular bulletins, of such information as is of practical value to the farming communities.

THE STUDENTS. The College is maintained at public expense

for the public good. The students, therefore, are under a peculiar obligation to perform faithfully all their duties to the state, the institution, and the community. Most important of these is an active interest in all that concerns the moral and intellectual welfare of the College. Regularity of attendance, faithful attention to studies, and exemplary personal conduct are insisted upon at all times, and the administrative bodies of the College are fully empowered to secure these results.

POLICY.

It is the policy of the Agricultural College of Utah, in accordance with the spirit of the law under which it is organized, to provide a liberal, thorough, and practical education. The two extremes in education, empiricism and the purely theoretical, are avoided, the practical being based upon, and united with, the thoroughly scientific. All the practical work, on the farm, in the orchards, vineyards, gardens, dairy, commercial rooms, kitchen, sewing rooms, different scientific laboratories, and carpenter, forge, and machine shops, is done in strict accordance with scientific principles. In addition to the practical work of the different courses, students are thoroughly trained in the related subjects of science, and in mathematics, history, English, and modern languages. While the importance of practical training is emphasized, the disciplinary value of education is kept constantly in view. It is recognized that the mind and eye and hand must be trained together in order to secure symmetrical development. The object is to inculcate habits of industry and thrift, of accuracy and reliability, and to foster all that makes for right living and good citizenship.

LOCATION.

The Agricultural College is located in Logan, Utah, the county seat of Cache County, which is one of the most prosperous agricultural counties in the state. The city has a population of about 6,000; it is noted for its freedom from vice, is quiet, orderly, clean, and generally attractive, with neat homes, good, substantial public buildings, electric lights, and water system. The citizens are thrifty and progressive. The College is beautifully situated on a broad hill overlooking the city, one mile east of Main Street, and commands a view of the entire valley and of its surrounding mountain ranges. The beauty of the location is perhaps unsurpassed 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, and seen through the clear atmosphere, constitute a delightful and impressive panorama. The valley is a fertile, slightly uneven plain, 4,500 feet above sea level, about twelve by sixty miles in dimensions, almost entirely under cultivation, and completely surrounded by the Wasatch Mountains, and is one of the most beautiful and healthful valleys in the western region.

BUILDINGS AND GROUNDS.

The College buildings comprise the Main Building, the Experiment Station Building, the Mechanic Arts Building, the Dormitory, the Conservatory, the Veterinary Laboratory, four barns, the Poultry Building, and residences for the President of the College, the Director of the Experiment Station, and the Farm Superintendent, and cottages for farm laborers.

THE MAIN BUILDING is constructed of brick and stone. It is 360 feet long, 200 feet deep in the central part, and four stories in height. It 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. This building contains the large auditorium, with a seating capacity of about 1,500; the administrative offices; the library and reading rooms; the gymnasium; the agricultural, zoological, botanical, chemical, and physical laboratories, museums and lecture rooms; the Station chemical laboratories and museum; the office and class rooms of the commercial department; the sewing and millinery rooms; the laundry, kitchen, and dining rooms; the museum and the offices of the department of domestic science; the dairy rooms; the armory and drill hall; the offices and class rooms of the department of civil engineering; and the class rooms for English, mathematics, modern languages and art.

THE EXPERIMENT STATION BUILDING is a brick structure, 45 feet long and 35 feet wide, two stories in height. It contains the laboratory of the Horticulturist; the offices of the Director of the Station, the Agronomist, the Horticulturist, and the Poultry Manager; the mailing room; and a dark room for photographic work.

THE MECHANIC ARTS BUILDING, situated just south of the Main Building, is a one-story structure, with the exception of the central part, which is two stories high. It is built of brick and has a corrugated iron roof. It has a ground floor area of 16,600 sq. ft., and is divided into four groups of rooms as follows:—for the wood working department—three rooms, with a floor area of 5,956 sq. ft.; for foundry work, forging, and carriage building—three rooms, with a floor space of 6,840 sq. ft.; for machine shop—one room, 1,512 sq. ft.; for draughting room (temporarily used as a testing laboratory), class rooms, director's office, library, and power room—six rooms, with a floor space of 3,376 sq. ft. The second floor—2,500 sq. ft.—is divided into four rooms; viz., Mechanic Arts Museum, blue printing room, room for painting, varnishing and polishing wood work, and instructor's office. The

building is heated by steam, well lighted and ventilated throughout, and well equipped for all the work undertaken.

Adjoining the Mechanic Arts Building is a store house, 27 by 40 feet, two stories high.

THE DORMITORY is a brick and stone structure, 50 feet wide by 80 feet long, four stories in height. It contains thirty-three rooms for students, each 12 by 14 feet, exclusive of closet; a reception room for students, 19 by 27 feet; a model kitchen; a dining room; a pantry, supplied with all modern conveniences; a laundry room; bath rooms; and rooms for the matron and for the employees. The rooms of this building are provided with steam heat and electric light, and each room has two registers for ventilation.

THE CONSERVATORY is of the most modern type, 90 by 25 feet, and is filled with beautiful flowering and ornamental plants. There are three compartments of equal size, one for semi-tropical plants, such as ferns, palms, bananas, etc., one for roses, and one for carnations and other plants. The equipment is used to supplement class work in botany, floriculture, and horticulture.

THE VETERINARY LABORATORY building, situated several hundred yards to the rear and east of the Main Building, is a stone and frame structure, 18 feet wide and 42 feet long, two stories in height. It contains a dispensary, an operating room, stalls, etc. It is heated by steam.

THE BARNs. There are four barns, for horses, cattle, sheep and hogs. The *horse barn* is a wooden structure, 60 feet square, and contains model sanitary stables for horses, besides storage divisions for hay, grain, and seed, and rooms for carriages and wagons, farm implements, and machinery; also the farm foreman's room and repair shop. A ten horse-power electric motor furnishes power for grain threshing, feed grinding, and fodder shredding. The *cattle barn* is 106 feet by 104 feet. It is provided with the most modern equipment throughout, including iron stalls, cement floors, mangers, etc. There are accommo-

datations for seventy-five head of cattle; also hospital rooms, feed rooms, a milk room, a root cellar, and storage room for hay and grain. The *sheep barn* is a modern building, 94 feet by 41 feet in dimensions, with accommodations for seventy-five sheep, and storage room for feed. The *hog barn* is a wooden structure, 65 feet by 31 feet. It contains two feed rooms, a cook room, an abattoir room, and twelve pens, each of which is provided with an outside run. This building accommodates sixty mature animals.

THE POULTRY BUILDING covers 230 feet by 25 feet, with yards 100 feet wide on each side. The building is divided into two sections:—first, the brooder section, with a capacity for about one thousand chicks; second, the experimental section, with a capacity of over five hundred hens. The latter is divided into thirty-two pens, with an outside yard one hundred feet long for each pen; it is shut off from the public and used for conducting experiments on different problems and questions of poultry culture. The building is heated by a hot water system. In the front part are an office, a feed and weigh room, a store room and a sleeping apartment. The basement, eighteen feet by thirty-four feet, is used only for incubators.

The land occupied by the College and its several departments embraces about 116 acres. Of this, thirty-five acres constitute the CAMPUS, which is tastefully laid out and adorned with flower-beds, and individual specimens and groups of ornamental shrubs and trees, both evergreen and deciduous. There are broad stretches of lawn, and wide drives and walks leading gracefully from various parts of the Campus to the College buildings. During the summer the conservatory contributes its hardy plants for lawn decoration.

Immediately east of the Main Building are the parade grounds and athletic field of about ten acres. The farms comprise 71 acres; the orchards, the forestry, the vineyards, and the small fruit and vegetable gardens, ten acres. All parts of the College grounds are used by the professors in charge of instruc-

tion in agriculture and horticulture for the purpose of practical illustration in their respective departments; they are also used for the work of the Experiment Station.

EQUIPMENT.

THE DEPARTMENT OF AGRONOMY is provided with a large collection of agricultural plants and seeds, and other illustrative material. The agricultural laboratory is equipped with balances, a self-registering dynamometer, an appliance for measuring the resistance to tractive force of incline and obstruction, a double-tree hitch apparatus, horse calipers, and apparatus for determining the water-holding capacity of soils, specific gravity of soils, etc. There is also a model of a horse arranged for determining, by experiments, the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc. An apparatus has been provided to demonstrate the influence of head diameter, length and bends on the rate of discharge of water through lines of tile and water pipe. The College farm is equipped with the best farming implements and machinery, including plows, cultivators, planters, cutters, shellers, grinders, a binder, a threshing machine, an electric motor, etc. For illustrative and experimental purposes, the farm is divided into numerous plats, on which different classes and varieties of farm crops are grown.

For the work in ANIMAL INDUSTRY, general use is made of the College barns, live-stock, dairy, etc. The live-stock consists of Clydesdale and Shire draft horses; Hereford, Short Horn, Holstein, and Guernsey cattle; Shropshire, Cotswold, Leicester and Rambouillet sheep; and Berkshire, Poland China, Tamworth, and Yorkshire hogs. A live-stock class room is provided, where the animals may be brought before the class for inspection and criticism. The dairy occupies a floor space of about three thousand square feet, which is divided into seven rooms for the various pro-

cesses of dairy work. The department is equipped with the apparatus necessary for all the processes of butter and cheese-making and milk testing. For butter-making there are milk vats and heaters, hand and power separators, hand and power churns, a combined churn and worker, and a Mason butter worker. For cheese-making there are four vats, gang and upright presses, and a curing room. Ample facilities are provided for illustrating the handling of milk for the milk trade, including the Star milk cooler, an intermittent pasteurizer, etc. The milk testing laboratory is as well equipped as any similar laboratory in the country. There are two steam and two hand Babcock testers, and nearly every type of Babcock test apparatus. There is also apparatus for testing the acidity of milk or cream, and a delicate balance, used in testing cheese and butter. The department has an eight horse-power boiler and a six horse-power engine, and model cold storage rooms for butter and cheese. The model poultry house and equipment affords special facilities for illustrative and practical experimental work with poultry.

THE BOTANICAL LABORATORY has a good supply of apparatus with which to do systematic and microscopic work. The herbarium contains 3,000 mounted and named specimens, to which the students have access at all times. There are 700 samples of seeds for use in economic botany. The general equipment includes a compound microscope for each student's use; 15 Bausch and Lomb dissecting microscopes; microtome; hand section cutters; stains; slides; and everything necessary for successful botanical work. The orchard, with over 300 varieties of apples, pears, peaches, plums, apricots, and cherries; the vineyards with 60 varieties of grapes, including the hardy and tender, or California, kind; the forestry experiment, containing many kinds of hardy trees and shrubs; and the small fruit and vegetable gardens, all are used in connection with the work in botany and horticulture for practical illustrative purposes.

THE VETERINARY LABORATORY is supplied with surgical instruments, a modern operating table, an operating room, box stalls

for patients, the necessary medicine, etc. Among the more important surgical instruments are a complete set of dental instruments, mouth speculum, tracheal and roaring instruments, neurotomy set, thermo-cautery, castrating and spaying instruments, obstetrical and parturition instruments, postmortem and diagnostic instruments, and other material found in a well equipped hospital. In this laboratory the agricultural students have practice and observation in the treatment of animals.

THE DEPARTMENT OF DOMESTIC SCIENCE AND ARTS is located in the Main Building, occupying the first floor of the south wing, besides several rooms in the basement. On the first floor are the office and reception room; a large lecture room; a laboratory and museum, provided with cabinets, charts, and about three hundred specimens showing the composition of food materials and the processes of their manufacture; a room for instruction in home nursing, with proper furnishings to give practice in making and changing beds for the sick and the general care of the sick room; four large sewing rooms and a fitting room, furnished with the latest improved machines, small sewing tables, low chairs, cutting tables, tracing boards, electric stove for pressing iron, wardrobes and cupboards for holding unfinished work, large display cabinets for finished work, and cabinets containing samples showing the process of manufacturing wool, silk, cotton, and linen. In the basement are two large class kitchens, each containing twelve individual combined work-tables and cupboards, with gas stove on each. The equipment of these rooms includes two large two-oven coal ranges and a single coal range, an Aladdin oven, and an electric stove. There are ample pantries and store rooms, and all necessary utensils and modern conveniences for teaching cooking. The dining room is furnished with extension tables, chairs, sideboards, cupboards, fruit closet, and a generous supply of china, silver, and table linen. The laundry room is provided with stationary tubs, a Chicago clothes-drier, ironing tables, skirt boards, and other necessary furnishings.

THE COMMERCIAL DEPARTMENT is completely equipped for

thorough and efficient work in modern business courses. The entire third floor of the front of the Main Building is occupied by the department, covering a floor area of 7,225 square feet. Each room is specially designed and furnished for the work to be conducted in it. The furniture of the department consists of hard wood counting room desks and counters, arranged in such a way that students may either sit or stand while at work. A complete set of modern banking fixtures, a wholesale house, a retail house, a commission house, a freight office, a real estate office, and an insurance office, with permanent blank books, letter files, rubber stamps, copying presses, college currency, blanks, etc., are provided by the College. The room for typewriting contains a full complement of standard machines, each provided with stand and copy-holder. The room for stenography is furnished with tables designed for convenience in practice work. The penmanship room and general class rooms are furnished with single desks.

MECHANICAL AND CIVIL ENGINEERING are taught with the assistance of a large and carefully selected equipment for practical work in shop, field, and laboratory. The shops naturally demand the most extensive outfit. The carpentry rooms are supplied with fifty benches, with full sets of tools. The wood-working machinery includes fifteen pattern-maker's lathes, universal saw tables, jig and band saws, planer, mortiser and borer, shaper, and sander; and there are the usual clamps, vises, glue-tables, veneer-presses and other special tools required for a shop of this kind. For the work in forging there are provided twenty-three single and eight double forges and anvils, each with a complete equipment of tools. In addition, there are two furnaces, one belted power hammer, drills, special swages, cutting-off machines, and leveling tables, with a considerable assortment of special tools. The equipment for foundry work includes cupola, brass furnace, core oven, annealing furnaces, flasks, patterns, ladles, and full sets of regular tools for flask moulding. The outfit used in carriage building comprises, in addition to the required benches, a full supply of carriage-builders' tools. In the room devoted to machine work in

iron are found six large engine lathes, a universal milling machine, a universal grinding machine, a speed lathe, a large drill press, a sensitive drill (built by students), a crank shaper, a large planer, grindstones, and emery wheels; every machine having its regular equipment of tools and attachments. The tool room is well supplied with drills, reamers, cutters of various kinds, files, calipers, etc. The store-house contains a full stock of materials to be used in the regular work of the various shops. All machinery, including blast and exhaust systems for the forge shop and foundry, is electrically driven.

The Engineering Laboratory is equipped with modern apparatus for experimental work on the strength and elasticity of all kinds of engineering materials, on efficiency and lost work of machines, on power losses by electrical and mechanical transmission; on the heating value of various kinds of fuels, and on flow of air and gases. The apparatus used for this work is of the highest order, and the results obtained are therefore reliable and of permanent value as engineering data. All junior and senior students are required to become familiar with the operation of this apparatus and to run through a series of tests, all of which are part of a general arrangement by the school to secure complete and reliable data on matters which are modified by local conditions. A fifteen horse-power gasoline engine for power and experimental purposes, a 200,000 lbs. Riehle standard testing machine, a standard cement testing machine, various electric machines, complete electric measuring apparatus, dynamometers, power scales, etc., may be mentioned as important parts of this equipment.

In Civil Engineering the interest naturally centers at two points, the apparatus provided for field work, and the equipment of the draughting rooms. For the work in surveying there are four first-class transits, three levels, a Johnson plane table, a planimeter, a clinometer, and other supplementary instruments, together with a full supply of chains, tapes, etc. For the work in hydraulics, the equipment includes a number of water meters of different kinds, a hook gauge, water registers, etc. The excellent

equipment on the experiment farm in the shape of measuring apparatus, and the many canals, rivers, and power plants in the immediate vicinity, afford excellent opportunity for very thorough training in hydraulic work. The draughting rooms are supplied with modern draughting tables, special instruments, models, handbooks, calculating tables, slide-rules, and such other accessories as are needed for office work.

A recent innovation is the establishment of a special Engineering Library, located in the Mechanic Arts Building. It contains the private library of the professor, with such other books from the general library as may be required for special study. Current engineering literature is placed at the disposal of junior and senior students in Engineering and advanced students in Mechanic Arts. A very extensive list of manufacturers' catalogues has been collected and classified, and forms an important part of this library.

THE BACTERIOLOGICAL LABORATORY is well equipped with modern apparatus for the work offered. Each student is provided with a high-power Leitz or Bausch and Lomb microscope with nose-piece and sub-stage. One microscope with triple nose-piece, fitted with 1-12 and 1-16 oil-immersion objectives, Abbe condenser, and rotary and mechanical stage, is used for identification work. Other equipment includes an autoclav, hot air and steam sterilizers, incubator, refrigerators, aerobic plate apparatus, anaerobic tube apparatus, microtome, analytic balance, cages, permanent mounts, glassware, chemicals, stains and culture media.

THE ZOOLOGICAL LABORATORY is equipped with water and gas, high power double nose-piece Bausch and Lomb microscopes, dissecting microscopes, condenser, camera lucida, rotary microtome, paraffine bath, freezing apparatus, microspectroscope, photomicrographic camera, haemacytometer, platinum ware, glassware, reagents, stains, etc. For the work in anatomy and physiology, in addition to the above, there are enlarged models of the eye, ear and brain, and a life size paper mache manikin, an articulated and a disarticulated human skeleton, and one or more skeletons

from each group of the vertebrates. In the work in zoology, the collection of mounted mammals and birds; alcoholic and dry specimens of reptiles, fish and the invertebrates; the Smithsonian material; and living forms from the aquaria are used. For the work in entomology the exhibition collection of insects, the systematic collection of the department, and the private collection and library of the professor are available.

THE CHEMICAL LABORATORIES occupy the second floor of the north wing of the Main Building, and include ten rooms. One large room is devoted to the work in general chemistry and qualitative analysis, and two smaller rooms to work in organic chemistry and quantitative analysis. A pleasant room, centrally located with respect to the laboratories, is used as the lecture room of the department. Adjoining the main laboratory and the lecture room are a large store room and a preparation room for the use of the instructor. On the east side of the wing, two large rooms and a store room are used for the work carried on by the Chemical Department of the Experiment Station. A room in the basement is used for the work in fire assaying.

The chemical laboratories are well equipped for elementary and advanced work in chemistry. In the College laboratories especial provision is made for the elementary study of the science. Individual desks, fitted with drawers and cupboards, and a very complete assortment of chemical glassware and chemicals, render the work in the laboratories easy and pleasant. There are also several valuable collections of gums, oils, coloring matters, foods, etc., that are important aids to the students in this department. The laboratories of the Experiment Station are excellently equipped for advanced work. The extensive collection of apparatus includes, among other things, balances; silver calorimeter; half-shade polariscope; several sets of hydrometers; thermometers; spectroscope; vacuum pan; filter press; apparatus for gas and microchemical analysis; a large supply of platinum ware; several models of elutriators; a very complete set of apparatus for food and fodder analysis; stirring apparatus; steam and hot air drying ovens; microscopes; apparatus for soil analysis; and a large

supply of Jena glassware, and chemically pure reagents. The laboratories are fitted with water, gas, hoods and all other conveniences.

THE PHYSICAL LABORATORY occupies a suite of rooms on the second floor. The equipment is fairly complete, consisting of all the necessary pieces of apparatus for class demonstration; a set of apparatus for elementary laboratory work, sufficient for sixteen students working on the same experiment; and all pieces required for an experimental course in heat and electricity. Some of the more important pieces are balances and weights by Sartorius; platform balances; an Atwood machine, with aluminum friction wheels and electrical attachments; centrifugal apparatus; working models of levers and pulleys; air pumps; thermometers in different scales; barometers; hydrometers; hydraulic press; porte lumiere; telescope; microscope; an assortment of lenses, mirrors, and prisms; spectroscope; sonometer; siren; tuning forks; organ pipes; Chladni's plates; electric static machine; Leyden jars; electroscopes; electrophorus; magnetometer; galvanometers of tangent, sine, balastic, astatic, and D'Arsonval types; Wheatstone bridges, both box and wire forms; resistance boxes; standard resistance and standard cell; primary and storage cells of various kinds; Ruhmkorff coils; electric generators and motors; Crooke's tubes and Geissler tubes.

THE COLLEGE MUSEUMS are supplied with a large number of specimens illustrative of geology and paleontology, 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 grains, representing the produce of Utah and other states. Contributions of fossils, ores, animals, relics, or other material of value to the museums will be highly appreciated. All gifts are labeled and preserved, and the name of the donor is kept on record.

THE ART ROOMS contain many valuable casts, most of which are reproductions of the works of the masters, together with many

smaller casts suitable for the more simple work in drawing. A few reproductions of the paintings of the masters are in the equipment, and charts to be used in the work in design; also the tables, drawing boards and cases necessary for the work.

THE LIBRARY, with its offices and reading room, occupies the entire front of the second floor of the Main Building. The large, well-lighted reading room is furnished with tables, comfortable chairs, periodical filing cases and sloping desks, shelves for reference books, and the card cabinet. The books are shelved on the Library Bureau standard steel stacks, arranged in alcoves, where tables are provided for those wishing to do special study. The readers have free access to the shelves.

The library now contains about 12,500 bound volumes and a large number of pamphlets. There have been accessioned since July 1, 1903, 1291 books; and 1166 pamphlets have been filed. The books are classified by the Dewey decimal classification, and a dictionary card catalogue of the library is nearly completed. The shelf list is also on cards, and forms a classed catalogue for official use.

The Library is a designated depository for United States public documents, and receives substantially all documents printed by the government. There are ninety-two periodicals on the subscription list, besides some eighty which are received as exchanges for the publications of the College and the Experiment Station. Thirty-five newspapers of the state are regularly received and placed on file in the reading room.

THE AGRICULTURAL EXPERIMENT STATION.

THE AGRICULTURAL EXPERIMENT STATION is a department of the College, supported mainly by Congressional appropriations, supplemented by the receipts from the sales of farm products. The Station was created for the special purpose of discovering

new truths that may be applied in agriculture, and of making new applications of well established laws. It is, therefore, essentially a department devoted to research; and as such, it does the most advanced work of the College.

The Experiment Station is not, in the ordinary sense, an institution where model farming is carried on. It has a much higher purpose. The practices of the farmer, good and bad alike, are subjected to scientific tests, in order to determine why the one is bad and the other good. Acting on the suggestions thus obtained, new lines of investigation are begun, with the hope that truths of great value to the farmer may be discovered.

The Station has for its present object the study of the underlying laws of irrigation. On the farm, in the orchards, gardens, and barns, experiments are going on that, in time, will lead to the establishment of an art of irrigation that will be based on laws developed by scientific methods. Special investigations for the purpose of encouraging the horticultural, dairy, and poultry industries, and of reclaiming the alkali and unirrigated lands of the state are also in progress.

By an act of the State Legislature of 1903, five experimental farms have been established in different parts of the state, for the purpose of demonstrating the possibilities of dry or arid farming on the soils of Utah. The work of these stations has been placed under the direction of the Experiment Station. In co-operation with the Department of Agriculture, the Station is maintaining a farm four miles west of Salt Lake City, upon which experiments upon the methods of reclaiming alkali lands are in progress.

An annual report and four or five bulletins containing the results of the experiments of the Station are published annually for free distribution among the people of the state.

The Experiment Station has a high educational value. Nearly all the members of the Station Staff are also members of the College Faculty, and the students, therefore, receive directly, and at first hand, an account of the methods and results of the work of the Station. On the farm, in the gardens, orchards, barns and

laboratories, the students receive training in the application of scientific truths to the practical affairs of men. The opportunities that the Experiment Station offers for advanced work in several branches of science are of great importance. The methods of science have been carried into the operations of every human occupation; and the more fully scientific methods of accuracy, persistence, and adjustment are understood by a man, the greater, as a rule, will be his success in any walk of life. The scientific method and spirit characterize all the operations of the Station, and none can fail to be benefited by a study of the experiments that go on at all times of the year.

The Station Staff are always glad to assist the advanced students of the institution in any investigations they may wish to undertake.

COLLEGE SOCIETIES.

Six different societies are maintained by the students of the College—two doing general literary work and four following special lines. Of these, one is exclusively for women, two are for men, and three are open to both sexes.

THE SOROSIS SOCIETY is the oldest of the College societies now in existence, and is somewhat exclusive in its nature. It is open to women only, and its object is the general literary and social culture of its members. Weekly meetings are held, at which members usually occupy the time, with an occasional lecture from the outside. At least one public entertainment of a literary nature and several social functions are given each year. The society has elegant apartments in the College building, equipped and furnished by the members.

THE STAR LITERARY SOCIETY is open to both men and women, and has for its object training in debate and recitation, and in the elements of parliamentary law and practice. To accom-

plish this, the society organizes and conducts conventions, mass meetings, legislatures, etc.

THE AGRICULTURAL CLUB is an organization of instructors and students interested in agricultural education. The object of this organization, which dates its existence in the College from November, 1901, is to promote social feeling among its members and to keep in touch with current events in agricultural science. One of the special features of the club work consists of lectures illustrated by stereopticon views. Meetings are held bi-weekly, and occasionally receptions are given during the year.

PHI DELTA NU was organized by the students in Political Science. Its chief aim is to investigate questions of law and procedure. Much attention is paid to debate, and intercollegiate contests are occasionally arranged.

THE COMMERCIAL CLUB has for its purpose to promote the interests of the Commercial School, to popularize the commercial courses, and to consider matters of interest not encountered in routine work. The club maintains an annual lecture course, given by prominent men throughout the state on topics of special interest to the business man. By social and literary contact, department loyalty is sought to be strengthened. All commercial students are eligible to membership.

THE ENGINEERING SOCIETY is an organization primarily intended to promote the interests of engineering in the College. While the principal effort is directed toward the professional subjects, the society has recently extended its scope to include social advantages as well. Membership is confined to the School of Engineering.

ATHLETICS.

THE ATHLETIC ASSOCIATION is organized for the promotion of the general physical culture of the students, and the encouragement of an active spirit in favor of manly sports. To this end

not only does the College maintain representative teams in the different sports, but the various schools of the institution compete with each other, thus offering men of all degrees of physical ability an incentive in the proper care and development of their bodies. The association is sustained with universal interest, and is accomplishing excellent results. It has at its disposal a ten-acre plot of ground east of the College buildings, where tennis courts, a base-ball diamond, and a foot-ball field have been laid out. A quarter-mile running path is built around the foot-ball field. Lockers and baths are provided for those in training. For indoor exercise the gymnasium on the third floor is available, with a complete equipment of wands, dumb-bells, Indian clubs, etc. Here an opportunity is given the men to take systematic drill in gymnastics under the direction of the instructor. A ten-lap board track has been built for work in track athletics during the winter. The drill hall may also be used for large classes in gymnastics. The men are assisted in their work by an instructor, whose aim is to help them make the most of the exceptional opportunities athletics offer for mental and moral as well as physical development. Those competing on the College teams must first pass a satisfactory physical examination.

THE COLLEGE MAGAZINE.

The students of the College maintain, as the official organ of the college community, a monthly magazine, "Student Life." The scope of the publication is best indicated by the names of its six departments, viz., Literary, Editorial, Student Affairs, Department Notes, Locals, Alumni and Exchanges. The editorial staff and business managers are chosen from the student body, and receive the enthusiastic support of a large number of students, faculty, alumni, and friends.

STUDENTS' EXPENSES.

Tuition is free. Students pay an annual entrance fee of \$5. The privileges of the library and museum are free. In the laboratories, workshops, cooking rooms, and in typewriting, students are charged an incidental fee of \$1 per credit hour. With proper care this expense need not exceed from \$2 to \$5 per year in each course.

The fee charged for a certificate of graduation is \$2 50; and for a diploma, \$5. Students are held responsible for any injury done by them to the College property.

Good board and rooms can be obtained in private houses for from \$3 to \$3.50 per week. By renting rooms and boarding themselves, students are able to reduce the cost of room and board to less than \$2.50 per week.

THE COLLEGE DORMITORY has accommodations for sixty. The second floor is used exclusively for women, and the third floor for men, there being no communicating passage between the two. The building is equipped throughout with steam heat and electric lights, and each floor has bathroom and toilet accommodations. The cost of room and board, including fuel and light, is from \$13 to \$15 a month, according to the kind of room used. Students furnish their own bedding; also rug or carpet, if desired. Board is payable in advance every month. The Dormitory discipline corresponds as nearly as possible to that of home life. Boisterous and rude conduct is not allowed. Parents or guardians of students in the Dormitory receive a monthly report.

Admission and Graduation.

CONDITIONS OF ADMISSION.

Graduates of the district schools, and those who have completed the Sub-Preparatory course of the College, are admitted provisionally without examination to the College Preparatory Course, and to the three-year courses in Agriculture, Domestic Science, and Commerce. Other applicants for admission to these courses must pass a satisfactory examination in the subjects of the Sub-Preparatory Course.*

Students who have completed the College Preparatory Course are admitted without examination to the Engineering courses, and to the General Science Course. They are also admitted without examination to the four-year courses in Agriculture, Domestic Science, and Commerce, being conditioned in the technical work preceding the freshman year in the course taken.

Students who have completed the first two years of the three-year courses in Agriculture, Domestic Science, or Commerce, are admitted without examination to the regular four-year courses in Agriculture, Domestic Science, or Commerce, respectively. They are also admitted without examination to the Engineering courses, and to the General Science Course, being conditioned in any of the subjects not already completed of the College Preparatory Course.

Those who have completed any of the three-year courses are admitted without examination to the sophomore year in the corresponding courses leading to degrees. Students may transfer from one regular course to another by making up all the technical work not completed of the course to which they transfer. Students will

*For a description of these subjects, see Sub-Preparatory Course.

be allowed to substitute technical work of one course for that of another, only by permission of the Faculty.

Other students are admitted to any of the courses leading to degrees, either upon the certificate of accredited schools, or upon satisfactory examination in the subjects of the College Preparatory Course. For a description of these subjects, see "College Preparatory Course" and "Departments of Instruction." By permission of the Faculty, students may be allowed upon entrance to substitute work in other courses for Drawing 1, History 2, Carpentry 5, and Forging 4a. Certificates from schools not accredited will be considered as the merits of each case may warrant.

Candidates for admission to advanced standing are required to pass satisfactory examinations in all the work of the preceding years, or to present satisfactory evidence of having completed an equivalent of such work in some other school or college.

Students are admitted to the Sub-Preparatory Course and to the Manual Training courses without examination, except such as may be necessary in order to determine the section in which they can work to the best advantage; the classes in these courses being divided into sections, which are graded in such a way as to be especially adapted to those who are not prepared to enter any of the more advanced courses. Candidates for admission to the Sub-Preparatory Course, and to the Manual Training courses in Domestic Arts and Mechanic Arts, must be at least sixteen years of age; to all other courses, fifteen. In all cases, good moral character is a requisite for admission.

SPECIAL STUDENTS.

Persons of mature years, who for satisfactory reasons desire to pursue a special line of study, may be admitted as special students, provided they give evidence of ability to do the work

desired. Special students may be allowed to graduate in any of the courses, on condition that they complete the required work and pass the necessary examinations.

REGISTRATION.

All students register at the beginning of the collegiate year for the work of the whole year. Changes in registration, and credit for work not registered, will be allowed only by special permission of the Council.

CLASSIFICATION.

All regular students are classified as first, second, and third year students in Agriculture, Domestic Science, or Commerce; or as first and second year students in the College Preparatory Course; or as first, second, third, and fourth year students in the Manual Training courses in Mechanic Arts or Domestic Arts; or as freshman, sophomore, junior, and senior students in any of the four-year courses leading to degrees; according to the lowest year in which they have subjects, provided such subjects are equivalent to one-third of all the work taken; otherwise in the next year above.

GRADUATION.

Students who complete the three-year courses in Agriculture, Domestic Science, or Commerce, or the four-year courses in Manual Training in Mechanic Arts or Domestic Arts receive

certificates of graduation. The degrees of Bachelor of Science, Bachelor of Science in Agriculture, Bachelor of Science in Domestic Science, Bachelor of Science in Commerce, Bachelor of Science in Civil Engineering, and Bachelor of Science in Mechanical Engineering are conferred upon those who complete the regular four-year courses in General Science, Agriculture, Domestic Science, Commerce, Civil Engineering, and Mechanical Engineering, respectively.

To obtain a degree, the student must complete an equivalent of sixteen hours of class work weekly for four years. Three hours of laboratory work count as one hour of class work, time being allowed for outside preparation and arrangement of notes.

Instructors keep a record of recitations, marked according to the decimal system. In making up final examination percentages, this is counted one-third, written papers during the term, one-third, and final examination for the term, one-third. In all courses, an average standing of not less than 75 per cent., with no grade less than 60 per cent., is required for graduation.

Students who completed the work of the junior year in 1903-1904 will be allowed to continue their courses, and graduate upon completion of the amount of work required at the time of entrance.

Schools and Courses of Study.

For the purpose of more efficient administration, the College is divided into five schools, the School of Agriculture, the School of Domestic Science and Arts, the School of Commerce, the School of Engineering and Mechanic Arts, and the School of General Science. These schools are not educationally separate, but are interdependent and together form a unit. They offer the following courses: (1) Agricultural Course, four years; (2) Domestic Science Course, four years; (3) Commercial Course, four years; (4) Civil Engineering Course, four years; (5) Mechanical Engineering Course, four years; (6) General Science Course, four years; (7) Agricultural Course, three years; (8) Domestic Science Course, three years; (9) Commercial Course, three years; (10) Manual Training Course in Domestic Arts, four years; (11) Manual Training Course in Mechanic Arts, four years; (12) College Preparatory Course, two years; (13) Sub-Preparatory Course, one year; (14) Special Winter Courses in Agriculture, Domestic Arts, Mechanic Arts and Commerce.

THE SCHOOL OF AGRICULTURE.

The instruction in Agriculture is divided into the following departments: The Department of Agronomy, the Department of Animal Industry (including Veterinary Science) and Dairying, and the Department of Horticulture. The courses of these departments are arranged especially with the view of enabling the student to lay a foundation upon which he can build a successful career as a farmer, or develop into a specialist in Agronomy,

Animal Industry and Dairying, or Horticulture. For the student who expects to return to the farm, a high school course, continuing through three years, has been arranged; and a college course leading to a degree is offered for those who desire to secure positions as farm managers, or as workers in agricultural faculties and in experiment stations. Farming, as commonly conducted in this inter-mountain region, consists of a union of all of the above divisions of the industry, and the three-year course confines itself to laying a foundation that will secure success on these farms; while the longer course enables the student to direct his efforts along the special lines with which he is most concerned.

In the junior and senior years, the student is allowed to specialize in Agronomy, in Animal Industry and Dairying, or in Horticulture. In these years also a list of electives is offered, from which the student is permitted to select, with the consent of the Committee on Agriculture, a list of studies aggregating not less than sixteen hours a week.

Experience has shown that practically all of the students who take this course come from the farm, and it is assumed that they are acquainted with the various manual operations of farm work. The design of the course is, therefore, to teach the sciences that underlie practical agriculture, and sufficient mathematics, English, history, and other supplementary studies to develop the agricultural students to the intellectual level of the educated in other professions.

The general and department libraries enable the student to become acquainted with a wide range of agricultural and related literature, while the laboratories of the College and the Experiment station afford opportunity for training and experience that it would be impossible to get from books. The outline of the course and the description of the studies prescribed will give a fuller understanding of the work offered.

A Winter Course in Agriculture is provided, designed to meet the needs of young men of mature years, who desire to

follow some agricultural pursuit, and who, though feeling the need of more thorough preparation for their work, can devote only the winter season to such preparation. The subjects presented are those about which every one engaged in agricultural pursuits should have a definite knowledge. They embody the underlying principles and the best practice. The class room instruction is supplemented by practice in the live-stock judging room, veterinary hospital, College dairy, agricultural and horticultural laboratories and greenhouses, and by visits of inspection to herds and farms and other places of interest.

THE SCHOOL OF DOMESTIC SCIENCE AND ARTS.

The courses in Domestic Science and Arts have for their object to train and broaden the minds of women, and to enable them to meet more intelligently the home demands of modern life. When woman has learned to apply the principles of science to the problems of daily living, she will realize that housekeeping is an occupation worthy of the best efforts of the brightest minds; and that the broadest courses in science, economics, and ethics can be applied to the betterment of home life. Formerly the higher education of woman led her away from the practical interests of the home. The recent establishment of Domestic Science courses in many leading colleges and universities shows a public demand for education toward home life rather than away from it. The State of Utah wisely established such courses when this College was first organized; and the favor with which the work has been received by the public shows the wisdom of the plans. The Domestic Science Course has been strengthened and improved each year, and better facilities for instruction and study have been generously provided. The four-year course gives the same training in mathematics, in English, and in science as is given in other baccalaureate courses, together with a broader culture in literature and modern languages than is offered in any

other. Both in the preliminary work and in the advanced years, special studies in the various lines of home science are prescribed in logical order, and stand as the distinctive features of the course. The three-year course is arranged as preparatory to the advanced years of the degree course, and also graduates with certificates those who are unable to complete the longer course. The Manual Training Course in Domestic Arts is offered for the benefit of those young women who do not wish to take the studies of the regular college years, but desire to devote more time to the subjects of especial interest to women. Such other studies as the student is qualified to pursue may, with the consent of the Faculty, be substituted for those offered in this course.

THE SCHOOL OF COMMERCE.

The purpose of the School of Commerce is to give opportunity for a liberal education with special emphasis upon the commercial phases of life. Persons who complete the Commercial courses should be better prepared to assume leadership and responsibility in business and in the various industries and professions. Two courses are offered: one of three years, leading to a certificate of graduation; the other of four years, leading to the degree of Bachelor of Science in Commerce. Students in the three-year course may emphasize the work in Accounting, receiving a certificate in Accounting, or they may emphasize the work in Stenography and receive a certificate in Stenography. Those who have finished the three-year course in Accounting are admitted to the sophomore year as candidates for degrees. The sophomore year is a continuation of the required work, but the work of the junior and senior years is to a great extent elective. During the sophomore year each student is expected to arrange his general plan of work for the junior and senior years. He may select as his major some phase of (1) Political Economy, (2) Political Science, or (3) Accounting and Administration. His plan

must be approved by the teacher in charge of the work selected and by the director of the School of Commerce, before May 1st of the sophomore year. When the student's plan has been approved his work is continued under the supervision of the professor in charge of the work selected.

For those who expect to enter the profession of law, the Commercial courses afford excellent preparation. Students who complete these courses will be well prepared for positions as teachers in commercial schools and in department schools where courses in commerce are given. The demand for thoroughly qualified teachers along this line of work is greater than the supply, and many desirable positions are open to those prepared to do the required work.

THE SCHOOL OF ENGINEERING AND MECHANIC ARTS

The School of Engineering and Mechanic Arts at present includes a four-year course in Civil Engineering and a four-year course in Mechanical Engineering, each leading to the degree of B. S.; also a four-year course in Mechanic Arts, leading to a certificate of graduation.

It is recognized that the first essential to an efficient and consistent course in engineering is a thorough fundamental training in the underlying principles of mechanical science, together with ample experience in the accepted methods of applying these principles to practical problems. With this in view, thorough courses in mathematics, physics, and theoretical mechanics constitute the work in the earlier years of the Engineering courses, while the junior and senior years are devoted chiefly to advanced specialization along the two lines of engineering. Such problems as are of local interest, such as irrigation, power development, power transmission, etc., are made paramount.

The class room work consists largely of lectures and discussions. Numerous problems are assigned to be reported in detail

by each student. In these, the method and order of attack and presentation, rather than numerical results, receive the attention and criticism of the instructor. In the shops and laboratory, opportunity is given for handling materials both in actual construction work and in testing for physical and mechanical properties; also for making tests on the efficiency of power-generating and transmission apparatus. In the field, practice is afforded in land, railroad, and hydrographic surveying. In all of this work the student is brought into contact with modern methods of manipulation and all results are compared for accuracy with accepted standards. Besides their practical value, the courses in Engineering have a high disciplinary value, and are especially adapted to develop originality of thought and action. The graphical and analytical methods are used throughout.

The course in Mechanic Arts is intended to qualify students as artisans, and the practical work of the shops and draughting rooms is emphasized. The course admits of a three-fold specialization—in woodcraft, forging, and machine work in metals, with special courses in foundry practice, carriage building, cabinet making, sloyd, etc. In this work are developed correct methods of using tools and doing the mechanic's work neatly, efficiently, and with rigid accuracy. Sufficient work is given in English, mathematics, and elementary science to represent a fair high school education. Students electing any branch of the Mechanic Arts Course are required to do at least one term's work in the carpentry shop as an initiatory course, and no machine work is given until the student has shown a reasonable efficiency with hand tools. All products of the shop are the property of the department, students being permitted to take away specimens of their work only by special permission.

THE SCHOOL OF GENERAL SCIENCE.

To carry out the work of the several technical schools of the College, an efficient instructing force and a complete modern equipment have been provided in the natural and physical sci-

ences, as well as in mathematics, history, languages, etc. This makes it possible to satisfy the growing demand for strong baccalaureate courses affording a broad general education in the earlier years, and admitting of specialization later, when the student has matured his plans. Such courses constitute the work of the School of General Science, and, paralleling the other degree courses of the College, lead to the degree of Bachelor of Science. The natural introduction to this work is the College Preparatory Course in English, mathematics, etc., with an option of physiography or a language instead of shop work. The work of the freshman year is all prescribed, consisting of English, mathematics, physics, chemistry and library work—the solid essentials of the specialist along any line. Those who have begun a language the previous year are advised to continue it through the freshman year, and defer the physics until their sophomore work.

Beyond the freshman year, certain requirements are made, as described on page 60, tending further toward a well rounded disciplinary training. With these restrictions, the whole field of college work lies open, with the understanding that the student will select some one major subject to which to direct his attention, and will group related courses around this, under the direction of the department in which he specializes. For convenience, the subjects offered have been grouped as below, and the requirement is that above the freshman year, the student shall complete ten hours of work in his major subject, ten hours in subjects found in the same group, and the remainder as he shall elect. For graduation, seventeen hours are required in the freshman year, and the equivalent of sixteen hours through each of the following years. A subject marked * below cannot become a major in the General Science Course, and, as required collateral work, the strictly technical studies are excluded.

Science Group.

Physics.	Chemistry.
Zoology and Entomology.	Botany.
Geology and Mineralogy.	*Agronomy.
*Animal Industry.	*Domestic Science.

Mathematical Group.

Mathematics.

Physics.

Chemistry.

Astronomy.

*Engineering.

Literary Group.

English.

Languages.

History.

Political Science.

Political Economy.

*Commerce.

IN THE COLLEGE PREPARATORY COURSE students are thoroughly drilled in the subjects required for admission to the courses in Engineering and General Science.

THE SUB-PREPARATORY COURSE is arranged to accommodate those young men and women who have been deprived of educational advantages until they have reached an age when they cannot advantageously attend the district schools. The special aim is to prepare the students for admission to the more advanced courses of the College, and to provide such training as will be of most value to those who are unable to continue their educational work beyond this course.

AGRICULTURAL COURSE.

This course leads to the degree of B. S. in Agriculture.

<i>Freshman Year.</i>	1st Term.	2nd Term.
✓ Chemistry 1	5	5
✓ Physics 1	3	3
✓ Animal Industry 5	3	3
✓ Agronomy 2	3	3
✓ Horticulture 1	3	3
	—	—
	17	17
<i>Sophomore Year.</i>	1st Term.	2nd Term.
✓ English 6	3	3
✓ Mathematics 4	5	5
✓ German or French	3	3
○ Botany 2	3	3
○ Chemistry 3	3	3
	—	—
	17	17
<i>Junior Year.</i>	1st Term.	2nd Term.
✓ English 7	3	3
✓ German or French	3	3
✓ Zoology 2	3	3
✓ Entomology 1	2	3
*Electives:	Electives:	
✓ Agronomy 4	1	1
✓ Agronomy 5	3	3
✓ Animal Industry 2	3	4
Zoology 3	2	2
✓ Chemistry 5	3	3
✓ Chemistry 6	3	3
Horticulture 2	3	2
		3

Senior Year.	1st Term.	2nd Term.
Economics 2	3	3
Animal Industry 3	2	Animal Industry 4..... 3
Geology 2	3	3
Engineering 3a	3	
Electives:		Electives:
Zoology 5	3	Zoology 6
Veterinary Science 3	4	Mineralogy
Agronomy 6	3	Engineering 5c
Horticulture 3	2	Horticulture 7
Entomology 2	2	2
Horticulture 6	2	

*In the junior and senior years, the student is permitted to select from the list of each term a number of studies aggregating with the prescribed work sixteen hours a week.

	3	German 3
	3	Chem 3
	3	zoo 3
Chem 3	3	Bot 6
Agron 4	3	
Chem 5	3	
Phys 3	3	
Agron 3	3	
Stork 1/2	3	German 3
Eng 3	35	Chem 3
Math 5	27	zoo 3
German 3	63	Bot 6
Bus Cas 1/2		Ent. 3
Eng 3		Stork 3
Math 3		German 3

DOMESTIC SCIENCE COURSE.

This course leads to the degree of B. S. in Domestic Science.

<i>Freshman Year.</i>	1st Term.	2nd Term.
English 6	3	3
Drawing 3	2	3
Chemistry 1	5	5
H. S. 8, 9, 11.....	5	5
H. S. 5, 10, 12.....	2	2
	—	—
	17	18
<i>Sophomore Year.</i>	1st Term.	2nd Term.
German or French	3	3
Mathematics 4	5	5
Physics 1	3	3
Botany 2	3	3
Zoology 2	3	3
	—	—
	17	17
<i>Junior Year.</i>	1st Term.	2nd Term.
English 7	3	3
German or French	3	3
Chemistry 2	4	4
Elective	6	3
		Bacteriology
		Elective
	—	—
	16	16
<i>Senior Year.</i>	1st Term.	2nd Term.
H. S. 13, 14	5	5
Geology 2	3	3
Chemistry 4	3	3
Economics	3	3
H. S. 15	2	2
	—	—
	16	16

COMMERCIAL COURSE.

This course leads to the degree of B. S. in Commerce.

<i>Freshman Year.</i>	1st Term.	2nd Term.
English 6	3	3
Mathematics 3	5	5
Pol. Economy 1	3	3
Pol. Science 2	3	3
Accounting & Adm. 3, or Stenography 2	4	4
	—	—
	18	18
 <i>Sophomore Year.</i>	 1st Term.	 2nd Term.
Chemistry 1	5	5
Physics 1	3	3
German, French, or Spanish. 3	3	3
Banking and Finance 1 & 2. 5	5	5
	—	—
	16	16
 <i>Junior Year.</i>	 1st Term.	 2nd Term.
English 7	3	3
German, French, or Spanish. 3	3	3
Mathematics 4	5	5
*Electives	5	5
	—	—
	16	16
 <i>Senior Year.</i>	 1st Term.	 2nd Term.
Trade and Trans. 1	3 Pol. Science 4	3
*Electives	13	13
	—	—
	16	16

*During the junior and senior years, students may elect five and thirteen hours respectively, but at least five hours of each year must be in the School of Commerce.

CIVIL ENGINEERING COURSE.

This course leads to the degree of B. S. in Civil Engineering.

<i>Freshman Year.</i>	1st Term.	2nd Term.
English 6	3	3
Mathematics 4	5	5
Chemistry I	5	5
Physics I	3	3
Engineering 1a	2	2
	—	—
	18	18
<i>Sophomore Year.</i>	1st Term.	2nd Term.
German or French	3	3
Mathematics 5	5	5
Physics 2	3	3
Engineering 1b	2	2
Engineering 3a	3	Engineering 3b
	—	—
	16	16
<i>Junior Year.</i>	1st Term.	2nd Term.
German or French	3	3
Mathematics 6	3	Engineering 9
Engineering 5a	3	3
Engineering 11	4	Engineering 4a
Geology 3	2	2
Engineering 15	1	1
	—	—
	16	16
<i>Senior Year.</i>	1st Term.	2nd Term.
Engineering 4b	5	5
Engineering 10	3	Engineering 8b.
Engineering 5b	3	Engineering 5d
Engineering 5e	2	2
Economics	3	3
	—	—
	16	16

MECHANICAL ENGINEERING COURSE.

This course leads to the degree of B. S. in Mechanical Engineering.

<i>Freshman Year.</i>	1st Term.	2nd Term.
English 6	3	3
Mathematics 4	5	5
Physics 1	3	3
Chemistry 1	5	5
Engineering 1a	2	2
	18	18

<i>Sophomore Year.</i>	1st Term.	2nd Term.
German or French	3	3
Mathematics 5	5	5
Physics 2	3	3
Engineering 1b	2	2
Engineering 3a	3	Engineering 6a 3
	16	16

<i>Junior Year.</i>	1st Term.	2nd Term.
German or French	3	3
Mathematics 6	3	Engineering 2a 3
Engineering 11	4	Engineering 4a 4
Engineering 5a	3	3
Engineering 6b	2	2
Engineering 15	1	1
	16	16

<i>Senior Year.</i>	1st Term.	2nd Term.
Engineering 4b	5	5
Engineering 2b	2	3
Engineering 7a	3	3
Engineering 8a	3	Engineering 8b 2
Economics	3	3
	16	16

GENERAL SCIENCE COURSE.

This course leads to the degree of B. S.

<i>Freshman Year.</i>	1st Term.	2nd Term.
English 6	3	3
Mathematics 4	5	5
Physics I	3	3
Chemistry I	5	5
Library Work	1	1
	—	—
	17	17

All of the work of the sophomore, junior, and senior years is elective; but students are required to complete two years of work in modern languages, and to take an equivalent of five hours through one year in English, of three hours in economics, and of four and one-half hours in zoology or in zoology and botany. Students who elect a language in the second year of the College Preparatory Course continue the language work in the freshman year, taking physics in the sophomore year. Beyond the freshman year, the student does the equivalent of at least ten hours through one year in some subject which he selects as a major, and an equal amount of closely related collateral work (see p. 52). To obtain a degree, the student must complete an equivalent of seventeen hours' work weekly during the freshman year, and sixteen hours for each of the other three years.

English 5
Mathematics

AGRICULTURAL COURSE.

Those who complete this course receive certificates of graduation.

<i>First Year.</i>	1st Term.	2nd Term.
English 3	4	4
English 4	2	2
Mathematics 2	5	5
Agronomy 1, or Animal Industry 1, 7	4	4
Animal Industry 1, 7, or Agronomy 1	4	4
Drawing 1	2	2
Military Drill	1	1
	—	—
	18	18

<i>Second Year.</i>	1st Term.	2nd Term.
English 5	5	5
Mathematics 3	5	5
Zoology 1	2	2
History 3	3	3
Carpentry 5	4	2
Military Drill	1	1
	—	—
	18	18

<i>Third Year.</i>	1st Term.	2nd Term.
Chemistry 1	5	5
Physics 1	3	3
Animal Industry 5	3	3
Agronomy 2	3	3
Horticulture 1	3	3
	—	—
	17	17

Botany 3.

4
29

DOMESTIC SCIENCE COURSE.

Those who complete this course receive certificates of graduation.

<i>First Year.</i>	1st Term.	2nd Term.
English 3	4	4
English 4	2	2
Mathematics 2	5	5
History 1	3	3
Sewing 5, 6	3	3
Physical Culture	1	1
	—	—
	18	18

<i>Second Year.</i>	1st Term.	2nd Term.
English 5	5	5
Mathematics 3	5	5
Zoology 1	2	2
History 2	3	3
H. S. 1, Sewing 7, 8	2	2
Physical Culture	1	1
	—	—
	18	18

<i>Third Year.</i>	1st Term.	2nd Term.
English 6	3	3
Drawing 3	2	Botany 1
Chemistry 1	5	5
H. S. 8, 9, 11	5	5
H. S. 5, 10, 12	2	2
	—	—
	17	18

COMMERCIAL COURSE.

Those who complete this course receive a certificate of graduation.

<i>First Year.</i>	1st Term.	2nd Term.
English 3	4	4
English 4	2	2
Mathematics 2	5	5
History 1	3	3
Acc. & Adm. 1	2	2
Pen. 2 or Typ. 1	1	1
Military Drill	1	1
	—	—
	18	18
 <i>Second Year.</i>	 1st Term.	 2nd Term.
English 5	5	5
History 6	3	3
Pol. Science 1	2	2
Zoology 1	2	2
*Prod. & Manuf. 1 or Typ. 2.	2	2
Acc. & Adm. 2 or Sten. 1.	4	4
	—	—
	18	18
 <i>Third Year.</i>	 1st Term.	 2nd Term.
English 6	3	3
Mathematics 3	5	5
Pol. Economy 1	3	3
Pol. Science 1	3	3
Acc. & Adm. 3 or Sten. 2.	4	4
	—	—
	18	18

*This option is open only to students in Stenography who take Typ. 2.

***MANUAL TRAINING COURSE IN DOMESTIC ARTS**

Those who complete this course receive certificates of graduation.

<i>First Year.</i>	1st Term.	2nd Term.
English 1	5	5
English 2	5	5
Mathematics 1	5	5
Sewing 1a	2	2
Geography	3	3
Physical Culture	1	1
	<u>21</u>	<u>21</u>
<i>Second Year.</i>	1st Term.	2nd Term.
English 3	4	4
Drawing 1	2	2
H. S. 1, 2, 3	3	3
H. S. 6	5	5
Sewing 1b	3	Sewing 2a
Physical Culture	1	3
	<u>18</u>	<u>18</u>
<i>Third Year.</i>	1st Term.	2nd Term.
English 4	2	2
Mathematics 2	5	5
History 2	3	3
Zoology 1	2	2
H. S. 5, 4a	2	2
Sewing 2b	3	Sewing 2c
	<u>17</u>	3
		<u>17</u>
<i>Fourth Year.</i>	1st Term.	2nd Term.
English 5	5	5
H. S. 7	3	3
H. S. 4b	2	2
Sewing 3, 4a	3	3
Drawing 3 or Sewing 4b	3	Botany
	<u>16</u>	3
		<u>16</u>

*By action of the Council, April 30, 1904, this course was extended to four years.

MANUAL TRAINING COURSE IN MECHANIC ARTS.

Those who complete this course receive certificates of graduation.

<i>First Year.</i>	1st Term.	2nd Term.
English 2.....	5	5
Mathemrtics 1.....	5	5
Penmanship.....	2	2
Geography	3	3
* ⁽¹⁾ ⁽²⁾ ⁽³⁾ Carpentry 1.....	5 ⁽¹⁾ ⁽²⁾ Carpentry 1 or ⁽³⁾ Machine Work 1.....	<u>5</u>
	<u>20</u>	<u>20</u>

<i>Second Year.</i>	1st Term.	2nd Term.
English 1.....	5	5
Mathematics 2	5	5
Drawing 2.....	2	2
(1) Carpentry 2, or (2) Forging 1, or (3) Machine Work 2	}	5
Military Drill.....	1	1
	<u>18</u>	<u>18</u>

<i>Third Year.</i>	1st Term.	2nd Term.
English 3.....	4	4
Mathematics 3.....	5	5
Drawing 5.....	2	2
(1) Carpentry 3, or (2) Forging 2, or (3) Machine Work 3	}	5
Military Drill.....	1	1
	<u>17</u>	<u>17</u>

<i>Fourth Year.</i>	1st Term.	2nd Term.
Physics 1.....	3	3
History 3.....	3	3
Zoology 1.....	2	2
Drawing 6.....	3	3
(1) Carpentry 4, or (2) Forging 3, or (3) Machine Work 4	}	5
	<u>16</u>	<u>16</u>

*The numbers preceding the shop courses indicate the order in which students who intend completing the course are required to take the subjects; e.g., a student having elected (3) in the second term of the first year will be expected to continue with the subject marked (3) in each succeeding year. A student having taken carpentry during the first year, may elect (2) in the second year and continue with (2) through each succeeding year.

COLLEGE PREPARATORY COURSE.

<i>First Year.</i>	1st Term.	2nd Term.
English 3	4	4
English 4	2	2
Mathematics 2	5	5
History 1	3	3
Drawing 1	2	2
Military Drill, or		
Physical Culture	1	1
	<u>17</u>	<u>17</u>
 <i>Second Year.</i>	 1st Term.	 2nd Term.
English 5	5	5
Mathematics 3	5	5
Zoology 1	2	2
History 2	3	3
Carpentry 5, or	} 2	Forging 4a, or
Physiography		Physiography
or *Language	3	or Language
Military Drill, or		
Physical Culture	1	1
	<u>18 or 19</u>	<u>18 or 19</u>

SUB-PREPARATORY COURSE.

	1st Term.	2nd Term.
English 1	5	5
Mathematics 1	5	5
Geography 1	3	3
English 2	5	5
Penmanship	2	2
Military Drill, or		
Physical Culture	1	1
	<u>21</u>	<u>21</u>

*Students may take German, French or Spanish, receiving a credit of three hours a week. This work must be continued in the freshman year.

WINTER COURSES.

For the accommodation of persons who can attend school during the winter months only, the following special courses are provided, beginning January 4, 1905. The Agricultural Course will be for four weeks, at the conclusion of which students may enter the regular work in Agriculture beginning with the second term. The Domestic Arts, Mechanic Arts, and Commercial courses will be twelve weeks. The work is elective, the student being allowed, with the approval of the professor in charge, to select the studies desired.

Students who take any of the winter courses may elect such other regular College studies as they are prepared to pursue advantageously.

AGRICULTURE.

	Hours.		Hours.
Soils and Farm Crops	5	Agricultural Chemistry	5
Stock Judging and Management	5	Horticulture	5
Stock Feeding	5	Entomology	5
Dairying Lectures	5	Vet. Science	5
Dairying Practice	5	Irrigation	5
		Poultry Keeping	5

DOMESTIC SCIENCE AND ARTS.

Cooking Lectures	5	Sewing	2
Cooking Practice	2	Dressmaking	2
Hygiene	5	Fancy Work	2

MECHANIC ARTS.

Carpentry A	5	Forging A	5
Carpentry B	5	Forging B	5

COMMERCE.

Bookkeeping	4	Penmanship	2
Business Forms	2	Commercial Law	2

Departments of Instruction.

AGRICULTURE.

PROFESSOR MERRILL.
PROFESSOR HUTT.
PROFESSOR CLARK.
ASSISTANT PROFESSOR DRYDEN.
MR. CROCKETT.
MR. JARDINE.

AGRONOMY.

I. SOILS AND FARM CROPS. The instruction in this subject is thoroughly practical and is intended to show how a knowledge of the natural sciences may be applied in farm practice. Lectures and recitations are supplemented by practical demonstrations in the laboratory, in the vegetation house and on the farm. Required of all first year students in Agriculture. Five hours a week, during either term. Four hours credit.*

(a) *Soils*: A study of the origin, formation and classification of soils with reference to their agricultural value. Special attention is given to the peculiar soils of the arid region; the conditions of fertility and the circumstances that influence it; reclamation of arid and alkali lands; and methods by which the original soil fertility may be maintained.

(b) *Farm Crops*: A study of the conditions of germination and growth and the circumstances modifying these conditions; practical methods for increasing the yields of crops; con-

*Throughout this division of the Catalogue, the number of hours assigned to each course indicates the actual time required in class-room, shop, or laboratory. Hours of credit when different from these are specified.

stituents of plants; sources and action of the various elements of plant food; the selection of crops for the arid region; the system of rotation best adapted to this state, taking into consideration the distribution of labor, the production of manure, and the extermination of weeds; summer fallow; and management of meadows and pastures. Students in this course are required to make plans for farms, keeping in view the distribution of labor and the maintenance of soil fertility. Frequent excursions are made to the College farms for noting the habits of growth of different farm crops.

2. IRRIGATION AND DRAINAGE. In the discussion of this subject, it is the aim to deal with those relations of water to soils and plants, which must be grasped in order to permit of a rational practice of applying, removing, or conserving soil moisture in crop production. The subject is discussed from the point of view of the agriculturist, rather than from that of the engineer. Required of all third year and freshman students in Agriculture. Three hours a week during the first term.

(a) *Irrigation*. This subject is studied with reference to its history, its different methods, the time of application of water, and the water requirements of different crops. The irrigation investigations conducted by the Experiment Station, in co-operation with the Department of Agriculture at Washington, afford students an excellent opportunity to compare the results of the various amounts applied and methods of application. The equipment for this work embraces 100 1-20 acre plats, and 180 plats each 1-25 of an acre, all properly flumed and with the necessary weirs; a vegetation house with 78 pots; in addition to the laboratories for chemical, physical, milling, and other tests.

(b) *Farm Drainage*. A study is made of the practical effects of drainage, of land needing drainage, and of the different problems involved in laying out and putting in a system of drains. Emphasis is laid on the reclamation of alkali lands by means of tile drainage, and a visit is made to the forty acres of land near Salt Lake City, recently reclaimed from alkali by the Experiment

Station, in co-operation with the Bureau of Soils of the Department of Agriculture.

3. SOIL PHYSICS. In this course the physical and chemical properties of soil receive attention; different methods of treatment are examined, as well as the influence of those methods upon moisture, texture, fertility and production. Further discussions include: soil texture as affecting capillarity; osmosis and diffusion as affected by cultivation and cropping; the determination of the absolute and apparent specific gravity of soils; the rate of percolation of water and of air through soils; the determination of temperature and moisture of various soils under field conditions; the effect of sub-soiling and various methods of tillage upon soil moisture and plant growth; the effect of different crops upon the soil and upon the succeeding crops; the effect of special and general farming upon the productive capacity of soils. Two recitations and one laboratory period per week. Required of all third year and freshman students in Agriculture. Three hours a week during the second term.

4. AGRICULTURAL EXPERIMENTATION. In this course students have access to the Experiment Station library, and make a study of the work of experiment stations and experimenters in this and other countries. The students are required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. Required of all students in Agriculture electing Agronomy as a major. One hour a week throughout the junior year.

5. RURAL ENGINEERING. This course embraces a discussion of the principles relating to the locating, arranging and equipping of farms, and the construction and operation of farm implements and machinery. Required of all students in Agriculture electing Agronomy as a major. Three hours a week during the first term of the junior year.

(a) *Laying Out the Farm.* Principles underlying the selection of the farm, its survey, location of buildings, irrigation ditches, drains, roads, etc., and its division into fields and yards.

(b) *Buildings and Fences.* The arrangement, design, location, and cost of farm buildings; fences and gates—their necessity, cost, kinds, and construction; wood for gates and fences—time to cut, conditions favorable to decay, and methods of preservation; discussion of fence laws.

(c) *Farm Machinery.* Attention is given to the tools and machinery of the farm—hoes, spades, plows, harrows, cultivators, rollers, planters, cutters, grinders, mowers, rakes, binders, wagons, etc.; their development, design, construction, draft, efficiency, durability, and care. The department has a large collection of lantern slides which are used in illustrating this subject.

6. RURAL ECONOMICS. Required of all students in Agriculture electing Agronomy as a major. Three hours a week during the second term of the senior year.

(a) *History of Agriculture.* This course covers the general development of the agriculture of those nations which have contributed most to agricultural progress. The development of Roman agriculture is specially emphasized, influencing as it has the agricultural practices in other nations.

(b) *Farm Management.* This course includes a discussion of special and general systems of farming, different systems of rotation, laying out and improving farms, economic bestowal of labor, and the profitable use of machinery.

ANIMAL INDUSTRY.

1. GENERAL COURSE. In this course a study is made of the qualities of animals as indicated by external form. This work also includes score card practice, students being required to give reasons for their rating. Lectures are given on the breeds of live stock best adapted to Utah conditions; the fundamental laws of breeding; selection of live stock; feeding and management. Required of all first year students in Agriculture. Five hours a week during either term. Four hours credit.

2. BREEDING. This course includes a study of the laws of

heredity, correlation, reversion, variation, and fecundity, and of the methods of breeding, cross-breeding, in-and-in breeding, and selection. These laws are practically-illustrated by their application to the improvement of the live-stock on the farm. Practical work is given in the study of herd books, tabulation of pedigrees, and such other exercises as enable the students to learn the value of a pedigree, and how to keep the records of any breeding herd. The live-stock and poultry on the College farm are available for study and illustration. Elective to juniors in Agriculture. Three hours a week during the first term.

3. BREEDS OF LIVE STOCK. The object of this course is to study the different breeds of horses, cattle, sheep, and swine for the purpose of learning their qualities, characteristics, and adaptabilities. Required of seniors in Agriculture. Two hours a week during the first term.

4. STOCK FEEDING. This is a study of the principles underlying the profitable feeding of animals; the composition of plants, animals, and animal products. A study is made of the practices which give best results, as indicated by available data, gathered from the work of experiment stations in this and other countries. Special attention is devoted to the study of Utah conditions in the handling of live-stock. The hygiene, care, and management necessary to successful feeding are also studied. In connection with this course, the live-stock, farm buildings, and other equipment are available for practice and advanced study. Required of seniors in Agriculture. Three hours a week during the second term.

5. DAIRYING. Required of all third year and freshman students in Agriculture. Three hours a week during the first term.

(a) *Milk*. This course includes a thorough study of the methods used in testing, buying, and preserving milk for food or manufacturing purposes. The farm problem of milk production is studied in connection with the management of dairy cows.

(b) *Butter*. Factory and hand methods in butter production, creaming of milk by different methods, handling and ripen-

ing cream, churning, salting, working, packing, and marketing are studied. The work of the class room is illustrated and applied in the College dairy.

(c) *Cheese*. The process of Cheddar cheesemaking is emphasized. The principles and practice necessary to make a uniform product and to overcome characteristic difficulties are described and illustrated in the class room and dairy. The methods of manufacture of other kinds of cheese, particularly of such kinds as may be made at the home dairy, are also studied. Students taking this course must provide themselves with white duck suits and caps.

6. **ADVANCED DAIRYING.** This course consists of a study of special dairy problems, and of experimental work in handling dairy products. Elective to students who have completed Course 5, and Bacteriology. Three hours a week during the second term.

7. **POULTRY CULTURE.** This course includes a study of breeds and breeding, feeding and management, buildings and appliances, natural and artificial incubation, diseases, and practice in judging. Required of first year students in Agriculture. Four hours a week during the last four weeks of either term. Credit given on course 1.

To those wishing to specialize in Poultry Culture, opportunity will be given to assist in experimental work and record observations on the same.

VETERINARY SCIENCE.

I. **VETERINARY ELEMENTS.** The aim of this course is to teach the student how to take care of sick animals, and how to diagnose and treat ailments common to farm animals,—as colic, milk fever, distemper, sweeney, lameness, etc. A careful study is made of contagious diseases and their control, with much emphasis laid on sanitation. This subject is taught by lectures and text books and is illustrated by observation and practice of the free clinics. Required of all third year and freshman students in Agriculture. Three hours a week during the second term.

2. VETERINARY ANATOMY. This subject is taught in part by lectures, and is illustrated by charts, skeletons, etc. During the term post-mortems are held and such dissection done as time will permit. Required of students electing Animal Industry as a major. Four hours a week during the second term of the junior year.

3. VETERINARY MEDICINE. This subject includes therapeutics and materia medica. Students are instructed in the compounding and administering of medicines. The course must be preceded by Veterinary Science I. Finlay Dun's *Materia Medica* is used as a text book. Required of students who elect Animal Industry as a major. Four hours a week during the first term of the senior year.

4. THE FREE CLINIC. Every Monday during the second term, clinics are held, to which diseased animals are brought for free treatment. Students are required to assist in the work and perform such operations as they are prepared for. Required of students taking any of the courses in Veterinary Science.

HORTICULTURE.

1. PROPAGATION AND CARE OF PLANTS. During the term's work, *Principles of Plant Culture*, by Goff, is used as a guide in the study of the principles underlying an intelligent understanding of the care, growth, and development of orchard and garden plants and trees. Instruction is also given in propagation,—by budding, grafting, layering, and by cuttings,—and in the management of hot-beds and forcing houses. The general requirements of the different vegetables in garden and in forcing house are discussed. Required of third year and freshman students in Agriculture. Three hours a week during the first term.

2. POMOLOGY. (*Fruit Growing*). The object of this course is to give the student a thorough knowledge of the theory and practice of fruit culture. The work begins with the origin of our cultivated fruits and their methods of propagation. Next follows

the study of location, of planting, and of profitable varieties for orchards and fruit plantations. The general care and management are taken up, including the subjects of cultivation, pruning, irrigation, and the treatment of insects and fungus diseases. Practice will be given in the classification and identification of fruits. Besides the lectures and class room work, students will be given practical orchard demonstrations and nursery practice, and will be required to propagate all varieties of fruits. All plants so produced become the property of the student. Reference works: *American Fruit Culturist*—Thomas; *Principles of Fruit Growing*—Bailey; *Bush Fruits*—Card. Required of juniors in Agriculture who elect Horticulture as a major. Three hours a week during the first term.

3. OLERICULTURE. (*Vegetable Gardening*). This course treats of the origin, history, and botanical relations of garden vegetables. From an economic point of view, a careful study is made of the location of gardens, the requisites of soil, fertilizers, and general cultivation. Study will be made of special garden crops for market purposes. Instruction will be given in the forcing of early and tender vegetables and in the making and management of hot-beds and cold frames. Reference Works: *Vegetable Gardening*—Green; *Principles of Vegetable Gardening*—Bailey. Required of seniors in Agriculture who elect Horticulture as a major. Two hours a week during the first term.

4. FLORICULTURE. (*Conservatory Work*.) This deals with the care and management of ornamental plants under glass, and of those used for bedding designs. Instruction is given in the propagation of foliage and flowering plants; management of tropical plants; potting, transplanting, and resting of plants; and, in general, greenhouse management. Students are required to name and propagate all varieties of plants in the College conservatories, the plants so produced becoming the property of the students. Reference Works: *Nursery Book*—Bailey; *Practical Floriculture*—Henderson; *Greenhouse Management*—Taft. For

juniors in Agriculture who elect Horticulture as a major. Two hours a week during the second term.

5. HOME FLORICULTURE. This course consists of a study of the more hardy household and garden plants with reference to their use for home adornment. Instructions are given in the making of soil and the potting and transplanting of house plants. A study is made of the use of bulbous plants for windows and garden borders. Practice is given in the starting of slips and cuttings, and in the trimming and training of plants. Reference Work: *Home Floriculture*—Rexford. Required of sophomore students in the Domestic Science Course. Three hours a week during the second term.

6. FORESTRY. The study of trees under forest conditions; trees in relation to altitude, humidity, temperature and winds; forest distribution in relation to soil and environment; methods of forestry propagation and management; windbreaks, shelterbelts and forestry plantations; forest products; study of the trees and shrubs of Utah. Reference Works: *Forestry of Minnesota*—Green; *First Book of Forestry*—Roth. For senior students who elect Horticulture as a major. Two hours a week during the first term.

7. LANDSCAPE GARDENING. The study of the principles of ornamental gardening; planning of lawns and grounds; making of lawns; laying out of walks and drives; use of ornamental trees and flowering shrubs; designing of beds and borders; grouping of shrubbery; use of bulbous plants and hardy herbaceous perennials; beautifying of home grounds. Students, on completion of this course, must be familiar with all trees, shrubs and plants used on the College lawns and campus. Reference Work: *Principles of Landscape Gardening*—Waugh. For senior students who elect Horticulture as a major. Two hours a week during the second term.

DOMESTIC SCIENCE AND ARTS.

PROFESSOR COTEY.
MRS. COOK.
MISS LYDIA HOLMGREN.
MISS QUAYLE.
MISS THOMAS.
MISS _____.

HOUSEHOLD SCIENCE.*

1. LAUNDERING. The work consists of practice alternating with lectures. The practice includes plain white washing and removing stains; clear starching; best methods of doing up fine mull; 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, bluing, and starch are discussed in their scientific and practical relations to laundry work. Required of second year students in the Domestic Science Course, and in the Manual Training Course in Domestic Arts. Four hours a week during the first third of the year.

2. COOKING I. The student receives instruction in selecting different cuts of meats, and in the methods of cooking best adapted to them. Practice is given in roasting, braizing, and boiling, and in stews and pot roasts; in preparing fowls for cooking, and in making dressings; in boning, larding, and skewering; in making croquets, scallops, etc. Instruction is given in preparing soup stocks, in making cream soups, vegetable soups, and purees. Students are taught to prepare sauces suited to different kinds of meats and to make various meat pies, dumplings for stews, and

*The hours of credit allowed in these courses may be found under "Schools and Courses of Study."

noodles for soups. Required of second year students in the Manual Training Course in Domestic Arts. Five hours a week during the second third of the year.

3. COOKING II. Instruction is given in the making of various kinds of yeast,—salt rising, wet and dry yeast; white and graham bread, corn bread, Boston brown bread; many varieties of rolls and buns. This work includes lessons in making baking powder and in making a great variety of the breakfast breads in which it is used: biscuits, muffins, gems, Johnny cake, pancakes, and waffles. Part of the term is devoted to plain pastry cooking. Required of second year students in the Manual Training Course in Domestic Arts. Six hours a week during the last third of the year.

4(a) COOKING III. Practice is given in making a variety of layer and loaf cakes, sponges, cream puffs, cookies, jumbles and fancy cakes, plain pastry, puff paste, tarts, patties, etc. The student is also given practice in a great variety of baked, boiled, and steamed puddings, custards, blancmanges, whips, creams, jellies, etc. Instruction is given in laying tables for dinner and lunch parties, and in waiting on tables. A few lessons are given in making taffy and sugar candies with French cream fondant. The work includes instruction in cooking vegetables and serving dinners during both winter terms. Required of third year students in the Manual Training Course in Domestic Arts. Four hours a week during the last two-thirds of the year.

4(b). COOKING IV. The work of this year includes a course in plain chafing dish cookery; also a course in hospital diets and sick room cookery. During the year the pupils are required to serve a five-course dinner and a "high tea." The pupils work together, plan the menu, do the marketing, and prepare and serve the best meal they can with a given sum of money. Required of fourth year students in the Manual Training Course in Domestic Arts. Four hours a week throughout the year.

5. FRUIT WORK. This 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. Young women doing this work are required to make use of reference books in the library, and to write essays upon the food value of fruit. Required of third year students in the Domestic Science Course, and in the Manual Training Course in Domestic Arts. Four hours a week during the first third of the year.

6. **FOODS.** Foods are studied as to their sources, processes of manufacture, conditions in which they are found in the market, and methods of cooking best adapted to each. Talks are given on marketing and the selection of foods, and their care before cooking. Sanitary conditions of the kitchen and store rooms are discussed. General rules of measuring and mixing food materials and their proper proportions and combination are taught, along with the best methods of baking and boiling, deep and shallow frying, and carving and serving food. The principles taught in the class are put into practice by each student in the kitchen. Required of second year students in the Manual Training Course in Domestic Arts. Five hours a week throughout the year.

7. **SANITATION AND HYGIENE.** The lectures on these subjects treat of sanitary conditions about the home; dangers from damp and unclean cellars, foul drains and sinks; ventilation, heating and lighting; instructions especially necessary to women on the care of personal health; home nursing, with illustrative lessons on changing beds for the sick. Required of fourth year students in the Manual Training Course in Domestic Arts. Three hours a week throughout the year.

8. **HYGIENE, HOME NURSING, AND FIRST AIDS TO INJURED.** These subjects are taught by lectures and enforced by illustrations, with references to such authorities as Park, Wilson, Nightingale.

Stoney, Hampton, Shaw, Canfield, and Stockholm. Required of third year students in the Domestic Science Course. Five hours a week during the first third of the year.

9. THEORY OF COOKING. The purpose of this course is to give instruction in the best methods of selecting, preserving, and cooking all common food materials. All principles learned in the class room are demonstrated in the kitchen. William's *Chemistry of Cookery*, Richard's *Chemistry of Cooking*, and various bulletins issued by the United States Government are used as texts. Required of third year students in the Domestic Science Course. Five hours a week during the second third of the year.

10. COOKING V. This course includes all kinds of plain and some fancy cooking, and covers 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. Chafing dish cookery will be taught and a few lessons in camp cooking given. A three-course lunch is served daily during the winter months. 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. Required of third year students in the Domestic Science Course. Four hours a week during the second third of the year.

II. THE SCIENCE OF NUTRITION. This is a study of foods, their chemical composition, characteristics, and digestibility; the way in which they nourish the body; the effect of age, climate, and occupation on the amount and kind of food required. Books on food by such authors as Yeo, Smith, Sir Henry Thompson, Green, Atkinson, Youmans, Parks, and Hoy are used for reference. Constant use is made of government bulletins on the composition and digestibility of foods. A full set of charts and bottles illustrating the composition of foods is used as an aid to the

study. Required of third year students in the Domestic Science Course. Five hours a week during the last third of the year.

12. DIETETICS AND INVALID COOKING. The course aims to determine the best foods to be given in diseases, with practice in their preparation and serving. The preparation of liquid diet, light diet and convalescent diet is taught as in hospital training schools. *Invalid Cooking*, by Mary Boland; *Food in Diseases*, by Yeo; *How to Feed the Sick*, by Dr. Gatchell, and other similar works, are used as texts. Required of third year students in the Domestic Science Course. Four hours a week during the last third of the year.

13. SANITATION. The course embraces a study of the conditions necessary to a healthful home—fresh air, pure water, heating, lighting, and drainage. *Household Sanitation*, issued by the Collegiate Alumni Association, is used as a text book, together with the *Sanitarian*. Reports of various boards of health are used as reference books. Required of seniors in the Domestic Science Course; elective to others who have had Course 12. Five hours a week during the first term.

14. HOUSEHOLD ECONOMICS. Lectures are given 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; the duties of mistress and servants; the entertaining of guests; and many other subjects of interest to the home-maker. Books by prominent writers on these subjects, and a number of periodicals of special value to students of the class, are found in the library. Required of seniors in the Domestic Science Course. Five hours a week during the second term.

15. ADVANCED COOKING AND DIETETICS. This advanced work in cooking includes a chafing dish course, some lessons in camp cookery, experiments in slow cooking with Aladdin oven, the preparation and serving of an elaborate Thanksgiving or Christmas dinner, with advanced work in dietetics. Required of seniors in Domestic Science Course. Four hours a week throughout the year.

Additional courses in practical cooking will be arranged for

students who wish to devote more time to that subject than is allowed in the regular courses.

SEWING.

1 (a). **HAND AND MACHINE MODELS.** During the first term of the first year, in the Manual Training Course, the student makes a set of models covering the full course in hand sewing; involving practice in basting, overcasting, backstitching, hemming, felling, gathering and stroking gathers, gussets, buttonholes, loops, eyelets, hooks, eyes, patching, darning, blanket stitch, slip stitch, chain stitch, French hem, French seam, etc. During the second term, instruction is given in the care and use of various machines, and regular practice in running, hemming, felling, gathering, puffing, tucking, quilting, etc. Corset cover and drawers are cut and made. Required of the first year students in the Manual Training Course in Domestic Arts. Five hours a week throughout the year.

(b) **MODELS.** The student makes a set of models, covering the full course in hand sewing, and a set using the attachments of the sewing machine. Instruction is given in the care and use of various machines. Talks are given on the position of the body and care of the eyes while sewing, on color, and on the nature and manufacture of materials used. Required of second year students in the Manual Training Course in Domestic Arts. Ten hours a week during the first term.

2. (a) **PLAIN SEWING.** During the second term, drawers, skirt and underwaist are cut and made. The student is taught to cut from patterns made according to the system used throughout the course, and to fit and finish a dress of washable material; also to cut, fit, and finish one shirtwaist. Required of second year students in the Manual Training Course in Domestic Arts. Ten hours a week during the second term.

(b) **DRESSMAKING.** This course includes draughting from measurements patterns for waists, skirts, sleeves, etc.; practice in cutting and basting; also cutting, fitting, and finishing a worsted dress and fancy waist. Required of third year students in the Manual Training Course in Domestic Arts. Eleven hours a week during the first term.

(c) **DESIGNING, CUTTING, AND FITTING.** Instruction is given by talks on grace in design of costume, and harmony of color. Further practice is given in cutting and fitting. Required of third year students in the Manual Training Course in Domestic Arts. Eleven hours a week throughout the year.

3. **ADVANCED DRESSMAKING.** Further work is done in practical costume making, cutting, basting, fitting, pressing, trimming, and finishing. Draughting from measurements patterns for waists, skirts, sleeves, princess gowns, jackets, coats, etc., forms a large part of the work. Required of fourth year students in the Manual Training Course in Domestic Arts. Ten hours a week during the first term.

4. (a) **ART NEEDLE WORK.** This consists of hemstitching, drawn work, Kensington embroidery. Required of fourth year students in the Manual Training Course in Domestic Arts. Ten hours a week during the second term.

(b) **ART NEEDLE WORK.** Roman cut work, jeweled embroidery, Mount Mellick embroidery, and modern lace making. Required of fourth year students in Manual Training Course in Domestic Arts. Ten hours a week during the first term.

5. **HAND STITCHES.** During the first part of the first year, the student makes a set of models, covering the full course in hand sewing, and involving practice in basting, overhanding, overcasting, backstitching, hemming, felling, gathering and stroking gathers, gussets, buttonholes, loops, eyelets, patching, darning, blanket stitch, slip stitch, blind stitch, herring bone stitch, feather stitch, chain stitch, French hem, French seam, etc. Talks are given on the position of the body and care of the eyes while sewing, on color, and on the nature and manufacture of materials used. Required of first year students in the Domestic Science Course. Five hours a week during the first term.

6. **MACHINE WORK.** The student is taught the use and care of various machines. Regular practice is given in running, hemming, felling, gathering, puffing, tucking, quilting, etc.

Drawers, skirt, and underwaist are cut and made. Required of first year students in the Domestic Science Course. Five hours a week during the second term.

7. MACHINE WORK. The students are taught to adapt and use patterns; to cut, fit, and finish a dress of washable material; and to cut, fit, hang, and finish one lined skirt of worsted material. Required of second year students in Domestic Science. Four hours a week during the first twelve weeks of the first term, and six hours a week during the next six weeks.

8. DRESSMAKING. This course includes plain draughting from measurements, practice in cutting and basting, and cutting, fitting, and finishing one fancy waist. Required of second year students in Domestic Science. Six hours a week during the second term.

COMMERCE.

PROFESSOR BEXELL.

PROFESSOR ENGLE.

PROFESSOR ROBINSON.

MR. BANKHEAD.

MR. JENSEN.

POLITICAL ECONOMY.

I. General Courses.

1. ECONOMICS I. Discussion of wealth, nature and requisites of production, diminishing returns from natural agents, labor and its increase, efficiency of production, credit, interest, wages, the industrial manager, prices, rent, socialism, taxation, the national debt, free trade, protection, bimetallism, United States notes, banking, the National Banking System, the labor problem, and co-operation. Bullock's *Economics*. Required in the third year of the Commercial Course. Three hours a week throughout the year.

2. **ECONOMICS II.** Three main purposes are kept in view in this course: a clear analysis of the mechanism and functions of industrial society; a fundamental discussion of wealth and monopoly—their origin, uses, and abuses; a dispassionate discussion of economic questions that have become political questions. Much reading and many theses are required. Hadley's *Economics* and the *Ashley Series*. Required of seniors in all College courses except Commerce. Three hours a week throughout the year.

3. **SOCIOLOGY.** The main topics treated are the subject matter of sociology, relation of sociology to other subjects, sociology as a science, division of sociology, society regarded as a contract, society as an organism, physical basis of society, association, meaning of association, the social mind, causes of social activity, industrial organization of society, the family, the state, the individual, external description of social development, processes of social development, natural selection in human society. The texts are Gidding's *Principles of Sociology* and Fairbank's *Introduction to Society*. Elective in junior and senior years. Two hours a week throughout the year.

II. *Banking and Finance.*

1 (a) **MONEY.** Money as a commodity, coinage, legal tender, gold standard, International Monetary Conferences, Colonial bills of credit, Revolutionary bills of credit, greenbacks, Confederate currency, silver dollars, panic of 1893, present conditions, etc. Required of sophomores in the Commercial Course. Five hours a week. First half of the first term.

(b) **BANKING.** Functions of a bank, the clearing house system, early American banks, the Bank War, the Safety Fund Bank, the national bank system, state banks, savings banks, loan and trust companies, present problems, etc. Required of sophomores in the Commercial Course. Five hours a week during the second half of the first term.

2 (a) **FUNDING OPERATIONS AND CORPORATION FINANCE.**

Money funds and credit, obtaining funds by inheritance, exchange, sales of commercial credit, long time paper, etc. Funding operations by the United States Treasury, the savings bank, building and loan associations, commercial banks, trust companies, brokers, and insurance companies. The general practice in funding corporations and other large business enterprises. Required of sophomores in the Commercial Course. Five hours a week during the first half of the second term.

(b) THEORY AND PRACTICE IN PUBLIC FINANCE. History of financial systems, theories of public expenditures, various methods and practices of taxation and other sources of income, public credit, relation of our Federal Treasury to our monetary system. Required of sophomores in the Commercial Course. Five hours a week during the second half of the second term.

3 (a) COMMERCIAL ORGANIZATIONS. Business men's associations, manufacturers' associations, commercial clubs, boards of trade, various stock exchanges, clearing houses, etc. The methods of business and extensive influence of these organizations. This course is principally research work to determine best methods of procedure in establishing large business enterprises and manipulating large amounts of stock and capital. Elective. Three hours a week during first third of the year.

(b) TRUSTS AND MONOPOLIES. A general research course in studying the present business and financial practices of monopolies, combinations and trusts, with a view of determining the cause and effect of the evils, and also of the virtues of such organizations. Elective. Three hours a week during second third of the year.

(c) DEPRESSIONS, PANICS AND CRISES. Causes and indications of prosperity and depression, prevention of crises and remedies when they occur, history of crises and depressions in the United States, study of the best methods of business practice in prosperity or depression. Elective. Three hours a week during last third of the year.

4 (a) HISTORY OF FINANCE. A brief survey of financial his-

tory to 1865. Study of the inflation period, struggle for resumption of specie payment, the silver problem, the surplus revenue of 1888, the two laws of 1890, the expulsion of gold, the panic of 1893, government loans and tariff of 1894, bond syndicate operations, the present financial situation. Elective. Two hours a week during first half-year.

(b) SECURITIES, INVESTMENTS AND SPECULATIONS. A general study of the stock markets of the world, together with present indications in private and public finance. Intended primarily for a final survey of the financial situation. Elective. Two hours a week during second half-year.

5. INSURANCE. An elementary course in theory, practice and history of insurance. A study of the history of risks, the different forms of insurance and annuity companies, policies, premiums, mortality tables, statistics, etc. The mathematical side of the subject is outlined under Accounting 5. Elective to juniors and seniors. Three hours a week during the second term.

III. Production and Manufacture.

I. COMMERCIAL GEOGRAPHY AND MATERIALS OF COMMERCE. The main topics treated are: basis of the work, natural conditions affecting commerce, human control of commerce, transportation and commercial routes. There is a discussion of the leading countries of the world under the following heads: climate, natural features, distribution of leading products, vegetable food products, vegetable and animal fibres, wood crop, minerals, manufacture, agriculture; distribution, necessities and advantages of freight rates, seaports, railroads, canals; trade tendencies, brief historical summaries, causes for shifting of trade centers, present trade tendencies and new regions now being opened, navigation, ocean routes, and such collateral topics as may be necessary to supplement the work outlined. This course presupposes a fair knowledge of mathematical and political geography, and a minimum knowledge of general history. Required of all

Commercial students in the second year. Two hours a week throughout the year.

2 (a) PRODUCTION AND MANUFACTURE I. This course deals with the comparative and extensive sides of the subject. There is a brief survey of latent commercial possibilities, as follows: surface indications, unexplored regions, probable demands upon the earth through future inventions, possible outcome of inhospitable regions and of desert areas, effect of known latent resources upon the expectations and policies of mankind. Present resources of leading nations are then considered, together with their influence upon trade routes. There follows a discussion of competing economic systems, past and present, and of the relation of social and political development of industrial mechanisms. Elective. Five hours a week until holidays.

(b) PRODUCTION AND MANUFACTURE II. This is the intensive course, concerned with direct and indirect production. There is a careful study of the productive and manufacturing processes through which such representative commodities as wheat, cotton, sugar beets, tobacco and lumber pass in going from the producer to the consumer. The work in indirect production considers cotton and woolen goods, steel, boots and shoes, etc. Elective. To continue from holidays to the end of the year. Five hours a week.

3. ECONOMICS OF MACHINE INDUSTRY. This course includes a brief treatment of the history and development of machinery and a discussion of the economic and social effects of labor-saving inventions upon society. The influence of labor-saving machinery upon concentration of capital, and its effects upon the labor of men, women, and children receives careful attention. Among the books consulted are Habson's *Evolution of Capitalization*, Wright's *Industrial History of the United States*, and Ely's *Evolution of Industrial Society*. Elective to juniors and seniors. One term. Three hours a week.

IV. Trade and Transportation.

I. HISTORY OF COMMERCE. The development of commerce in Egypt, Greece, Rome, Florence, Medieval Europe, etc., down

to and including the commercial nations of modern times. Special attention is given to materials and machinery of commerce, to trade routes, and to the relations between commercial developments and other branches of the history of civilization. Required of senior students in the Commercial Course. Three hours a week during the first term.

2 (a) **MERCHANDISING.** A practical study of business methods, treatment of retailing, wholesaling, commission business, jobbing, etc.

(b) **DOMESTIC TRADE.** This course considers self-sustaining and dependent localities and their products, together with the exchange of products, and its causes and results.

(c) **TRANSPORTATION AND COMMUNICATION.** Railroads, canals, lakes, rivers, oceans, etc. Telegraphs, telephones, cables, wireless telegraphy, mail, etc.

(d) **FOREIGN TRADE AND RELATIONS.** Our surplus, foreign needs, consular service, expense of marketing, reciprocity, tariffs, etc. Required of candidates for degree in Commerce with Trade and Transportation as major. Elective. Five hours a week throughout the year.

3. **THEORY AND PRACTICE IN ADVERTISING.** A study of the fundamental principles of modern advertising. Special emphasis will be laid on the peculiarities of composition in newspaper and circular advertising, proof-reading, effectiveness of design, illustrations, coloring and display; proper distribution of funds for various forms of advertising, various devices used in so called "follow up" systems; store and window display, card writing, etc. Propositions will be submitted to students from local printers and merchants for actual "write ups" during special advertising seasons. Occasional illustrated lectures will be given. Elective to juniors and seniors. Three hours a week during the second term.

POLITICAL SCIENCE.

I. **CIVIL GOVERNMENT.** Our European ancestors, origin of states and state constitutions, English and American governments

compared, state and foreign service, the treasury, money and coinage, banks, the post office, the executive departments, legislation, the constitution, federal and state powers, political parties, party issues, etc. Required of second year students in the Commercial Course. Two hours a week throughout the year.

2 (a). **COMMERCIAL LAW.** Formation of contracts; dealing with offer and acceptance, form and consideration, capacity of parties, reality of consent, and legality of object. Operation of contracts, including limit of contractual obligations and assignment. Interpretation, rules of evidence, and rules of construction. Discharge of contracts; the agreement, performance, breach, impossibility of performance, and operation of law.

(b) **LAWS OF BILLS AND NOTES.** Maker's, acceptor's, drawer's and indorser's contracts; proceedings before, upon, and after dishonor; accommodation paper; grantor and surety; holder's position; defense; equities, etc.

(c) **CORPORATION LAW.** Kinds, formation, powers, liabilities, ownership, shares, subscriptions, calls, notice, transfers, management, officers, directors, contractual powers, dividends, dissolution, etc.

(d) **PARTNERSHIP LAW.** Formations of partnerships, essentials, liabilities of members, capital, profits, good-will, individual and firm liabilities of members, capital, profits, good-will, individual and firm property, agency for partners, usage, majority, torts of partners, dissolution, winding up, priority, distribution, etc. Required of freshmen in the Commercial Course. Three hours a week throughout the year.

3 (a) **CONSTITUTIONAL LAW.** The Constitution; the rise of the American Union; distribution and powers of the government; powers of Congress; powers of the Executive; the judicial department; checks and balances of governments; government of the territory; the admission of new states; amendments to the constitution; civil rights and their guarantees; protection of persons accused of crime; protection of contracts and property, etc.

(b) INTERNATIONAL LAW. Persons concerned, rights and duties of states, territorial jurisdiction, jurisdiction on high seas, agents of the state, nationality, treaties, settlement of disputes, war and its effects, military occupation, hostilities, neutrality, contraband, blockade, etc. Elective. Two hours a week throughout the year.

4. COMPARATIVE STUDY OF GOVERNMENTS. A comparative study of the various systems of government; Greece, Rome, Great Britain, German, France, Switzerland, United States, etc. Required of seniors in the Commercial Course. Three hours a week during the second term.

ACCOUNTING AND ADMINISTRATION.

1. THEORY OF ACCOUNTS. The law of debit and credit, illustrated by correspondence with offices; practice in ruling, checking, construction of balance sheets; practice in letter writing, making out bills, invoices, receipts, bills of lading, legal forms, etc. A portion of each period will be devoted to short and rapid methods of commercial calculation. Required of first year students in the Commercial Course. Five hours a week throughout the year. Two hours credit.

2. PRACTICAL ACCOUNTING AND BUSINESS PRACTICE. A thorough and complete course in all the essentials of accounting as practiced in modern business houses. Great stress will be laid on correspondence and the construction of legal and commercial papers. Five budgets must be prepared by each student during each term. A portion of each period will be devoted to rapid calculation. Inter-communication business is carried on between fellow-students and commercial schools in the leading lines of business, affording excellent drill in correspondence and office practice. Given in the second year of the Commercial Course. Two hours daily throughout the year. Four hours credit.

3. ADVANCED ACCOUNTING AND BUSINESS MANAGEMENT.

(a) Corporation Accounting and Auditing. A practical application of previous courses in accounting as applied to corpora-

tion accounting. Manufacturing, railroading, and merchandising receive special attention.

(b) A thorough study of bank accounting and auditing. Various systems are studied and compared. Office practice and inter-communication work similar to that described under Accounting 2 form a part of this course. The college maintains completely equipped offices in banking, transportation, real estate, brokerage, commission, retailing, and wholesaling. When all the theoretical work and the business practice is completed, the student is placed as manager of one of these offices and is held responsible for all its operations. Each student must pass through at least three offices during the year. Five budgets similar to those described under Accounting 2 are required each term. A portion of each period is devoted to rapid calculations. Given in the third year of the Commercial Course. Two hours daily. Four hours credit.

4 (a) PUBLIC ACCOUNTING AND ADMINISTRATION. A general course in analyzing accounts of various typical corporations in connection with a reference book course along similar lines. Emphasis is given to such accounts as usually necessitate expert accounting and public auditing.

(b) The organization of individual businesses, corporations, and bodies politic; detection of waste and fraud; preparation of reports, etc. Elective after Accounting 3. Two hours daily throughout the year. Four hours credit.

5. HIGHER COMMERCIAL MATHEMATICS. Application of the progressions to commercial problems, construction of formulas relating to annuities, sinking funds, the various problems of insurance, theory of probabilities, construction and use of various tables and statistics; the use of logarithms in commercial computation, etc. Elective after Accounting 4. Three hours a week during the first term.

STENOGRAPHY.

I. STENOGRAPHY. This is an elementary course in the Gregg system of shorthand. The system is adapted perfectly to the hand,

the shape of the characters being based upon movements common to ordinary handwriting. Other important features are no position writing, no shading, and no detaching of vowels. These advantages enable the students to master the principles in a short time and to begin work from actual dictation early in the course. The dictation covers business correspondence in various branches. Optional with Accounting 2 to second year students in the Commercial Course. Five hours a week throughout the year. Four hours credit.

2. STENOGRAPHY II. After a thorough review of the text book, various forms of correspondence, legal documents, speeches, specifications, editorial matter, court testimony, etc., are taken up. This course is designed especially for students, with the necessary preparation, who desire to qualify for the United States Civil Service, or for reporting work. A study of public meetings, court procedure, and reporting of public meetings and trials in Logan and vicinity. Much transcribing on the typewriter. Optional with Accounting 3 to third year Commercial students. Five hours a week throughout the year. Four hours credit.

TYPEWRITING.

1. TYPEWRITING I. Beginning with simple exercises, the student learns correct fingering with other manipulation of the typewriter. Special attention is given to proper care and mechanism of the machine. Optional with Penmanship to first year students in the Commercial Course. One hour a week with much practice between recitations. One hour credit.

2. TYPEWRITING II. This is a special course for those taking Stenography. In addition to the elementary principles given in Typewriting 1, students make copies of correctly written correspondence, legal forms, etc.; also personal composition and dictation. As soon as a moderate speed is attained, the work includes transcription of shorthand notes. One hour daily throughout the year. Two hours credit.

3. **TYPEWRITING III.** A special course for those who show skill and ability to write rapidly and accurately. Students receive dictation, writing same on the typewriter. Technical typewriting, as used in various branches of business, including tabulating, spacing, etc., is a feature of this course. Elective after Typewriting I.

SPECIAL LECTURES.

A series of about ten lectures on practical business subjects will be given during the year by prominent business men throughout the state. All Commercial students are expected to attend these lectures.

ENGINEERING AND MECHANIC ARTS.

PROFESSOR JENSON.
 PROFESSOR _____.
 ASSISTANT PROFESSOR JENSEN.
 MR. HANSEN.
 MR. PULLEY.
 MR. WILLIAMS.
 MR. DAHLE.
 MR. WANGSGARD.
 MR. MADSEN.

ENGINEERING.

1a. **MECHANICAL DRAWING.** This course is intended as a preparation for the work which follows in the courses in Engineering. It consists of a thorough drill in the elementary principles of projection, including linear perspective and the more common conventions of engineering drawing. Required of freshmen in the Engineering courses who have had Drawing I. Six hours a week throughout the year. Two hours credit.

1b. **DESCRIPTIVE GEOMETRY.** The representation of problems, and the solution of problems relating to geometrical magnitudes in space, including orthographic projections and development; projections of plane and solid intersections; shades and shadows; and applications to stereotomy, sheet-metal work, and other structural problems. Required of sophomores in the Engineering courses. Six hours a week throughout the year. Two hours credit.

2a. **ELEMENTS OF MECHANISM.** This includes a consideration of the various forms of motion and its production; link motions, and their modifications as used in machinery; cam and wiper outlines; wheel trains and aggregate motions; design and construction of gear teeth; mechanism of special machinery. This subject deals with the purely geometrical relations of machinery, rather than with the form and design of articulating parts. Required of juniors in the Mechanical Engineering Course. Five hours a week during the second term. Three hours credit.

2b. **MACHINE DESIGN.** In this course are considered the effects of the moving parts of machinery, such as the reciprocating parts of the steam engine, flywheels, governors, etc.; and the general principles of design in machinery, carrying into effect the principles of the course in mechanism combined with those of the course in applied mechanics. The theory of design is supplemented throughout by the practical design of specific parts. Required of seniors in the Mechanical Engineering Course. Two hours a week during the first term; four hours a week during the second term. Three hours credit in second term.

2c. **MACHINERY.** This course will afford an opportunity to apply the general principles of mechanism and machine design to a more detailed study of a particular type of machinery. The selection of the type to be studied will be left largely to the individual student. The following types are suggested:—a more detailed study of steam machinery in general; locomotive construction; mining machinery; cotton and wool manufacturing machinery, etc. The work will consist of:—(a) prescribed reading;

(b) study of catalogues and bulletins of manufacturers; (c) draughting board designs; (d) visits of inspection to such installations as are within reach. Regular hours will be assigned for consultation with the instructor, whose function will be to aid in getting materials for study and to render such criticism and aid as will secure thorough and thoughtful work and reasonable progress. A definite scheme must be submitted and approved at the beginning of the year, and adhered to throughout the course. The course will be arranged according to the time at the disposal of the student, with ten hours a week throughout the year as a minimum. No student will be admitted to this course who has not completed all the technical work of the regular course in Mechanical Engineering.

3a. SURVEYING I. The general methods of plane and topographic surveying and the use, care, and adjustments of instruments. The practical work in the field receives particular attention. Raymond's *Plane Surveying*. Required of sophomores in Engineering courses and of seniors in Agriculture. Six hours a week during the first term. Three hours credit.

3b. SURVEYING II. This course deals especially with the advanced problems of city, railway, and hydrographic surveying. Raymond's *Plane Surveying* and Searles' or Trautwine's field book. Required of all sophomores in the Civil Engineering Course. Six hours a week during the second term. Three hours credit.

4a. MECHANICS. In this subject are treated the general laws of statics and dynamics as illustrated in the composition and resolution of forces, determinations of centers of gravity, moments of inertia, dynamics of a particle and of rigid bodies, friction, mechanics of fluids, wind pressure and graphical statics. Required of juniors in the Engineering courses. Four lectures and three hours laboratory a week during the second term. Four hours credit.

4b. APPLIED MECHANICS. This course includes a discussion of the materials of engineering and their use in engineering

structures, the derivation of formulæ for stress in members, and a careful comparison with the results of experimental research in the strength of materials. This is followed by a study of stresses and strains in framed structures, analytical and graphical methods being used in all cases. These are illustrated by complete analyses of roof and bridge trusses and modern high-framed buildings. The subject is concluded with the discussions of the continuous girder, the elastic arch, and the general theory of elasticity. Required of seniors in the Engineering courses. Four lectures and three hours laboratory a week throughout the year. Five hours credit.

4d. HIGH FRAME BUILDING. This course consists of a complete design of a modern high steel frame building, based upon the theory of stresses in framed structures, and upon modern practice. The instruction will consist of twelve or fifteen lectures, and an equivalent of six hours per week for one-half year in the draughting room. Students who have completed 4b are eligible.

5a. HYDRAULICS. A thorough study of the general theories of hydraulics, the flow of water through pipes, weirs, orifices and open channels, the measurement of water power, the dynamic pressure of flowing water; together with an introduction to the general theories of water power. Merriman's *Hydraulics*. Required of juniors in the Engineering courses. Three hours a week throughout the year.

5b. IRRIGATION I. The location, design, construction, and operation of irrigation canals; design and construction of dams, reservoirs, headgates, etc.; the duty of water; subdivision systems, and other subjects relating to irrigation systems. Wilson's *Manual of Irrigation*. Required of seniors in the Civil Engineering Course. Three hours a week during the first term.

5c. IRRIGATION II. This course deals especially with the problems in irrigation relating to the farm; the measurement and division of water, design of subdivision systems, methods of application of water. Required of seniors in the Agricultural Course

who elect Agronomy as a major. Three hours a week during the second term.

5d. WATER SUPPLY AND SEWERAGE. A detailed study of the questions pertaining to public water supplies, reservoirs, filtration, distribution systems, classes of water pipes, and the design of water supply systems. The course also includes a study of the problems relating to drainage, construction and capacity of sewers, and sewage disposal. Fanning's *Water Supply Engineering*. Required of seniors in the Civil Engineering Course. Four hours a week during the second term.

5e. HYDRAULIC LABORATORY. This course is intended to apply the theoretical work of courses 5 a, b, and d, to practical problems in the measurement of water; establishment of lines and grades for canals, aqueducts, and pipes; rating of meters; making of estimates, etc. Required of seniors in the Civil Engineering Course. Four hours a week throughout the year. Two hours credit.

6a. PATTERN MAKING AND FOUNDRY PRACTICE. This is an elementary course in making patterns of pipe fittings, groove pulleys, hangers, core boxes, etc.; followed by practice in moulding and running simple castings, including some work in core baking, annealing, etc. Required of sophomores in the Mechanical Engineering Course; open to others who have completed Carpentry 5. Ten hours a week during the second term. Three hours credit.

6b. MACHINE WORK. This course consists of selected exercises from Courses 2 and 3 in machine work, Mechanic Arts. Required of juniors in the Mechanical Engineering Course. Six hours a week throughout the year. Two hours credit.

7a. STEAM ENGINEERING. This course begins with a consideration of the elements of a steam power plant, followed by a more detailed study of engines and boilers according to type and adaptability to different services. A careful study is made of the thermodynamics of heat engines, including refrigerating ma-

chines. Standard methods of engine and boiler testing, and modern practice in design and construction are also considered. Required of seniors in the Mechanical Engineering Course. Three hours a week throughout the year.

7b. HEATING AND VENTILATING. This course will consist of a complete design of a modern heating and ventilating plant, according to one of the approved systems. The instruction will consist of three lectures a week for one-half of the year. An equivalent of not less than six hours a week one-half of the year in the draughting room will be required. Students who have completed 7a are eligible.

8a. POWER. This course considers the sources of power; prime moves in general and their efficiencies; methods of distribution and transmission, with a careful study of losses due to friction, dissipation, etc.; power measurement, and power absorption by various methods of working machinery; also a careful study of lubricants and their economy as such. In connection with the classroom work, laboratory experiments are made in the performance and efficiency of mechanical apparatus of various kinds, and in the efficiency of fuels, in gas analysis, etc. Tests of heating and power plants are made as opportunity is afforded. Required of seniors in the Mechanical Engineering Course. Three hours a week throughout the first term.

8b. HYDRAULIC MOTORS. This course deals with the general theory of hydraulic motors; the efficiency of the various leading types and their adaptability to special purposes; and the installation and operation of hydraulic power plants. Required of seniors in the Engineering courses. Two hours a week through the second term.

9. ROADS AND PAVEMENTS. The location, construction, and maintenance of country roads; the pavement of city streets; materials used and methods of construction. Byrne's *Highway Construction*. Required of juniors in the Civil Engineering Course. Three hours a week during the second term.

10. MASONRY STRUCTURES. This course includes a treatment of the materials used in masonry structures; a discussion of the theories relating to retaining walls, dams, arches, and other masonry structures. Baker's *Masonry Structures*. Required of seniors in the Civil Engineering Course. Three hours a week during the first term.

11. ELECTRICAL TRANSMISSION OF POWER. This course consists of lectures and assigned readings on the phenomena of the electric circuit, with sufficient study of the production of the commercial current to understand the causes of loss in a transmission line. Required of juniors in the Engineering courses. Three lectures and three laboratory hours a week during the first term. Four hours credit.

MECHANIC ARTS.

I. Carpentry.

1. (a) Rudimentary exercises in sawing, ripping, planing, mortising, dovetailing, and general joinery, and the application of these to simple articles of furniture, furnish the details of this course. Correct methods of using and handling tools are emphasized. Required of all first year students in the Manual Training Course in Mechanic Arts. Fifteen hours a week during the first term. Five hours credit.

(b) Sharpening and adjusting carpenter's tools, and saw filing, followed by practice in making panels, doors, and sashes, and in simple cabinet work, constitute the work of this course. Open to first year students in the Manual Training Course in Mechanic Arts. Fifteen hours a week during the second term. Five hours credit.

2. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course 1 (b). Fifteen hours a week throughout the year. Five hours credit.

(a) Plain cabinet making, concluding with a model carpenter's work bench. First term.

(b) Wood turning and other machine work in wood, and the construction of a standard carpenter's tool chest. Second term.

3. In this course the principles and practice gained in the foregoing courses are applied to frame house building. If possible, practice in building a regular house is given; but when such opportunity cannot be had, special parts, such as a section of wall including doors and windows, hips and valleys in roofs, etc., are built in the shops. Open to third year students in the Manual Training Course in Mechanic Arts who have completed Course 1 (b), and preferably Course 2 (a). Fifteen hours a week throughout the year. Five hours credit.

4. In this course the student is allowed to specialize in cabinet making, including carving, fitting and finishing, or in inside finishing of houses, or in special work in stair building. In whichever branch he may specialize, he is required to finish a complete design. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 3. Fifteen hours a week throughout the year. Five hours credit.

5. This course consists of selected exercises from Courses 1 (a) and 2 (b). Required of all second year students in the College Preparatory Course who intend to take Engineering; also of all second year students in Agriculture. Six hours a week during the first term. Two hours credit.

II. Forging.

1. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course 1 in Carpentry. Fifteen hours a week throughout the year. Five hours credit.

(a) This course consists of preliminary exercises, such as drawing, bending, twisting, and shaping, followed by exercises in iron welding and making iron tools. Accuracy in methods and results is insisted upon. First term.

(b) The work in this course consists of practice in steel

and iron welds, steel and steel welds, and general work in steel tool forging and dressing. Chisels, punches, reamers, hammers, tin shears, nippers, etc., are sample exercises. Second term. Prerequisite, Course 1 (a).

2. Open to third year students in the Manual Training Course in Mechanic Arts who have completed Course 1. Fifteen hours a week throughout the year. Five hours credit.

(a) This course consists of elementary work in horse-shoeing and spring building, and in making and repairing different kinds of agricultural and other implements. First term.

(b) The work in this course consists of filing, chipping, hand fitting, polishing, and general vise work; also special forms of forging, such as wicket gates, cultivator teeth, andirons, etc.

3. The work of this course consists of practical carriage building and advanced forging. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 2. Fifteen hours a week throughout the year. Five hours credit.

4(a). The work of this course consists of selected exercises from Course 1. Required of second year students in the College Preparatory Course who intend to take Engineering. Six hours a week throughout the second term. Two hours credit.

4(b) This course consists of selected exercises from Course 1(a), followed by work in horse-shoeing and in repairing agricultural implements. Required of second year students in the Agricultural Course. Six hours a week during the second term. Two hours credit.

III. Machine Work.

1. This course consists of special work in filing, chipping, scraping, and hand fitting; concluding with work in forging, and in dressing and tempering machine cutters. Open to first year students in the Manual Training Course in Mechanic Arts who have completed Carpentry 1 (a). Fifteen hours a week during the second term. Five hours credit.

2. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course 1. Fifteen hours a week throughout the year. Five hours credit.

(a) This course consists of preliminary exercises in straight and taper turning, drilling, planing, and milling, accompanied by instruction in the care and use of machinery. First term.

(b) The work of this course consists of boring and chucking in the lathe, thread cutting, polishing, etc., and such other exercises on other machines as will be required in making shaft couplings, tap wrenches, etc. Second term.

3. Open to third year students in the Manual Training Course in Mechanic Arts who have completed Course 2. Fifteen hours a week throughout the year. Five hours credit.

(a) The work of this course consists chiefly of making taps, spiral drills, fluted reamers, and mandrils, with practice in finishing tempered articles on the universal grinding machine. First term.

(b) This course consists of the manufacture of parts of machinery, such as engine connecting rods. Second term.

4. The work of this course consists of practice in actual machine construction. Speed lathes and sensitive drills may be taken as sample exercises. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 3 (b). Fifteen hours a week throughout the year. Five hours credit.

IV. Foundry Work.

1. This course consists in thorough practice in moulding and general foundry work, including iron and brass casting. The patterns chosen illustrate a wide range of work, the course being intended to give a general knowledge of foundry practice. Elective. Six hours a week during the first term. Two hours credit.

2. This course will consist of special moulding, especially such work as will be required in connection with the work of

machine design. Elective. Six hours a week during the second term. Two hours credit.

V. Sloyd.

This course in Sloyd is intended primarily for younger students who are not sufficiently developed physically to carry the heavier work of the regular Mechanic Arts courses. It is also well adapted for teachers who desire to qualify themselves for teaching Sloyd in the district schools. The best Swedish and American methods are followed.

1. (a) Simple household and school-room articles, such as pointers, bread-boards, clothes-horses, foot-stools, scoops, etc., constitute the exercises of this course. Elective. Four hours a week during the first term. Two hours credit.

(b) The work of this course consists of elementary turning and scrolling, simple carving, and the completion of a small cabinet. Elective to students who have completed 1 (a). Four hours a week during the second term. Two hours credit.

CHEMISTRY.

PROFESSOR WIDTSOE.

ASSOCIATE PROFESSOR YODER.

MR. _____.

1. GENERAL CHEMISTRY. Required of sophomores in the Commercial Course and of freshmen in all other courses. Nine hours a week throughout the year. Five hours credit.

(a) *Elementary Chemistry*. This course deals with the important facts and fundamental theories of chemistry, and with the application of chemistry in the arts and manufactures. The laws of chemical combination, the writing of reactions, and the solving

of stoichiometrical problems are given special, careful consideration. Students taking this course must also take Courses 1 (b) and 1 (c).

(b) *Elementary Practical Chemistry*. This course supplements Chemistry 1 (a) 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.

(c) *Qualitative Analysis*. This course runs parallel with and supplements the descriptive study of the metals and their compounds. Under the direction of the instructor 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 a number of unknown substances. This work is deemed extremely important from an educational as well as from a practical point of view.

2. ORGANIC CHEMISTRY. This course consists: (a) of a brief survey of the more important 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; (b) of the preparation of a number of organic compounds to illustrate the methods of work of the organic laboratory. Required of juniors in the Domestic Science Course. Prerequisite: Chemistry 1. Five hours a week throughout the year. Four hours credit.

3. AGRICULTURAL CHEMISTRY. This course consists of lectures and assigned readings on the chemical problems of agriculture. The aim is to make the student familiar with our present knowledge of the composition of the plant; the sources of plant food; the composition of the animal; the principles of animal nutrition; and the chemical nature of soils, waters, dairy products, etc. In the laboratory are taught the methods of agricultural anal-

ysis. Required of sophomores in the Agricultural Course. Prerequisite: Chemistry I. Three hours a week throughout the year.

4. CHEMISTRY OF FOOD AND COOKERY. In this course, foods and methods of cooking are studied experimentally, with especial reference to human nutrition. The common foods, both animal and vegetable, are separated by physical and chemical means into their constituents, after which the effects of different methods of cooking upon the various constituents are investigated. Wine, beer, tea, coffee, milk, and other drinks are also examined, and separated into their constituent parts. Spices and condiments are studied with the especial purpose of learning simple methods for the detection of the common adulterants. Some attention is also given to the effect of different kinds of heating apparatus upon the chemical changes that take place during cooking. Required of seniors in the Domestic Science Course; elective to others. Prerequisite: Chemistry I and 2. Six hours a week throughout the year. Three hours credit.

5. QUANTITATIVE ANALYSIS. This is mainly a laboratory course, giving the student practice in the typical methods of proximate and ultimate quantitative chemical analysis. It aims also to give, in familiar talks, a due appreciation of the importance of accuracy in chemical work, and of the relation of quantitative analysis to theoretical chemistry. After the necessary introductory practice, samples of waters, soils, ores, agricultural products, and foods are analyzed and reported upon. The work of the Experiment Station chemical laboratory furnishes a good opportunity for the study of methods of analysis. Elective to those who have completed Course I.

6. ANALYSIS OF FOODS AND FEEDING STUFFS. In this course, various articles of food, or farm products used for food, are analyzed to determine quantitatively the different constituents, as proteids, carbohydrates, fats, crude fibre, etc. In this work the Methods of Analysis adopted by the Association of Official Agricultural Chemists are in the main followed. Besides this work, numerous exercises in the detection of adulterants are carried out,

and, if desired, the sanitary analysis of water will be included. Elective. Prerequisites: Course 1, and preferably Courses 2 and 5. In connection with the work going on in the Experiment Station laboratory, there is excellent opportunity for students to pursue this course. The course is especially valuable to students of Domestic Science or of Agriculture, by giving them a scientific basis for judging the dietetic value of any food, or for determining a proper ration for man or beast. A direct aim of this course, also, is to fit the students for positions as analysts in agricultural experiment station chemical laboratories, or food inspection laboratories. Credit is given according to the work done.

7. **ADVANCED QUALITATIVE ANALYSIS.** This is a laboratory course, supplementary to the brief course 1 (a) in Qualitative Analysis, and is recommended to those General Science students who specialize in Chemistry. Elective. Prerequisite: Chemistry 1. Two hours a week during the first or second term.

8. **ADVANCED THEORETICAL CHEMISTRY.** Lectures and recitations on some of the fundamental laws and theories of chemistry, including atomic theory, kinetic theory of gases, Avogadro's hypothesis, relation of gaseous, liquid, and solid states, solution pressure and vapor pressure, osmotic pressure, thermo-chemical relations, electrolytic dissociation, chemical equilibrium, law of mass action, isomerism and isomorphism, etc. Elective. Prerequisites: Chemistry 1 and 2. It is desirable to have completed Chemistry 5 also before taking this course. Three hours a week during the first term.

9. **HISTORY OF CHEMISTRY.** This course, or Chemistry 10, or a combination of these two courses, according to the desires of the students, will follow Chemistry 8 during the second term. Prerequisites as in Chemistry 8. Three hours a week.

10. **INDUSTRIAL CHEMISTRY.** Lectures and assigned reading on special chemical industries; e. g., the manufacture of sulphuric acid and soda, commercial fertilizers, lime and cements, glass and porcelain, pigments, sugar, starch, alcohol, soap, explo-

sives, etc. It is not proposed in this course to deal exhaustively with many industries, but with a few industries for illustration, to enable the students to get an idea as to what is required of a chemist or a superintendent of such a factory, and to give him some drill in searching out the best and most profitable methods of conducting any chemical industry. Elective. See Chemistry 8 and 9 for the time and the prerequisites of this course.

11. TOXICOLOGY. This is a laboratory course including a study of some of the more common poisons, their detection, and their separation from articles of food, contents of stomach, etc. Some attention is also given to the symptoms of poisoning, antidotes, and post-mortem examinations. The course is intended especially for students who expect to follow the profession of medicine, or who are preparing to work in laboratories as public analysts. Elective. Prerequisites: Chemistry 1 and 2, and preferably Chemistry 5. Three hours a week during the second term.

12. ASSAYING. The fire and wet methods of assaying continue and supplement the work of Course 5 in quantitative analysis. This course includes: a study of the principles of fluxing and their application to typical silicious, barytic, and pyritic ores; the assaying of rich, medium, and low grade silver, gold and lead ores by means of the "nitre," "nail," and "roasting" methods, and the comparison of results; the assaying of copper mattes and bullion by the combined dry and wet methods; and an explanation of mine, mill, and smelter assays. The wet methods of assaying are the ordinary methods of volumetric analysis so modified as to be applicable to the several purposes of the "assay requirements," and will include the rapid determination and estimation of silver, lead, copper, iron, silica, sulphur, zinc, lime, manganese, cobalt, nickel, etc. Large numbers of "smelter checked" samples are given as exercises to the students to assay. The practice in "fire" and "wet" assaying, as given by this course, aims to make of the student a practical and capable assayer. Elective. Prerequisites: Chemistry 1, and preferably Chemistry 5.

13. PHOTOGRAPHY. A course in practical photography will be offered, consisting principally of practical work by the students, introduced and supplemented by lectures and demonstrations by the instructor. The students will be given the use of a camera, and will expose plates or films under various conditions as to light and subject in and out doors, develop plates and films, study effect of over and under-exposure and over and under-development, print pictures on the several classes of paper, as "blue-print" paper, "printing-out" paper, and "development" paper, tone with gold and with platinum, make transparencies and lantern slides, and enlarge or reduce pictures. Fees will be charged to cover cost of material consumed. One hour a week during the second term. Elective to students having had one term's work in Chemistry. Students desiring it will be given opportunity for more advanced experimentation along the several phases of photography.

14. RESEARCH WORK. The laboratories of the College and the Experiment Station are open to students with the necessary preparation, who desire to pursue special independent studies in the domain of chemistry. The researches carried on by the chemical department of the Experiment Station are of great aid to students who are engaged in the solution of scientific problems. Elective to those who have completed Courses 2 and 5.

ZOOLOGY AND ENTOMOLOGY.

PROFESSOR BALL.
MR. PETERSON.

I. ZOOLOGY.

1. ELEMENTARY ANATOMY AND PHYSIOLOGY. In this course the structure and function of the different parts of the human body are carefully considered, special attention being given to the

principles that underlie the care of the body. Dietary studies, ventilation, exercise, use of medicines, and other hygienic topics are treated in special lectures. In the laboratory the students first become familiar with the human skeleton and then work out the fundamental unity of the vertebrate plan through a comparison of a series of skeletons. During the second term they take up the microscopic study of tissues and examine fresh material from the butcher's shop. Martin's *Human Body*. Required of all second year students, except in the Manual Training courses, of third year students in the Manual Training Course in Domestic Arts, and of fourth year students in the Manual Training Course in Mechanic Arts. Two recitations and two hours laboratory a week throughout the year. Two hours credit.

2. GENERAL ZOOLOGY. Required of juniors in the Agricultural Course, of sophomores in the Domestic Science Course and of students in the General Science Course. Two lectures and three hours laboratory a week throughout the year. Three hours credit.

(a) *Invertebrate Zoology*. In each group of the invertebrates a typical example is taken up in detail and from this, as a basis, the related forms are considered and correctly associated. In the laboratory, representative examples of each group are studied and dissected. Special attention is given to Protozoa, *Hydra*, *Spongilla*, and other fresh water forms. First term. Parker and Haswell's *Manual of Zoology*.

(b) *Vertebrate Zoology*. In this course a detailed study is made of the different groups of the vertebrates, special attention being given to their origin and development. In the laboratory, typical examples of the lower groups are dissected and the remainder of the time is spent in a systematic study of the birds and mammals of Utah. Second term.

3. BIOLOGY. This course includes lectures on distribution of animals, environment, struggle for existence, natural selection, mimicry, protective coloration and resemblance, warning colors, adaptation, development, degeneration, parasitism, dimorphism, heredity, sex, instinct and reason, and kindred subjects connected with evolution. Jordan and Kellog's *Animal Life* will be used

as a reference text. Elective to juniors in the Agricultural Course and to others who have completed Course 2. Two lectures a week throughout the year.

4. **ADVANCED PHYSIOLOGY.** The subjects discussed are: the phenomena of life; the physiology of the cell; chemical composition of the body; the physiology of nutrition; irritability and contractility; physiology of the circulation; physiology of the nervous system and sense organs. The laboratory work is an introduction to experimental physiology. Elective to those who have completed Course 2, and Chemistry 1. Three hours a week (lectures, conferences, and laboratory work) during the second term.

5. **HISTOLOGY.** A minute study of the elementary tissues, excepting the nervous system. Some time in the beginning is devoted to the preparation of stains, hardening, fixing and other fluids, each student being required to prepare the reagents for his own use. A typical mammal is used for material. Prepared slides of human tissues are furnished the student. The course includes methods of fixing, decalcifying, staining, imbedding, sectioning, mounting, and drawing. Elective to seniors in the Agricultural Course, and to others who have completed Course 2.

6. **EMBRYOLOGY.** In this course the general principles of development are discussed, beginning with the cell, maturation, fertilization, karyokinesis, etc., and taking up the development of the gastrula in the different classes of the vertebrates. In the laboratory the student will trace the development of *Ascaris*, the frog, chick, and rabbit. Elective to seniors in the Agricultural Course, and to others who have completed Course 2. Three hours a week during the second term.

7. **ADVANCED VERTEBRATE ZOOLOGY.** In this course the student will take up the comparative anatomy of the higher vertebrates and will become familiar with the classification of the more common forms of the amphibians, reptiles, birds and mammals of the Intermountain region. One recitation and three hours laboratory a week during the first term. Two hours credit.

II. ENTOMOLOGY.

1. ECONOMIC ENTOMOLOGY. In this course the student acquires a general knowledge of the characteristics and habits of the different orders of insects. Injurious species are pointed out and the best remedies suggested. Insecticides and spraying receive attention. Each student makes a collection of insects and arranges it according to families, naming the common injurious species. Smith's *Economic Entomology*. Required of juniors in the Agricultural Course and elective to others. Two recitations and one hour laboratory a week during the first term. Two hours credit.

2. ADVANCED ENTOMOLOGY. This course is intended for Agricultural students who take a major in Horticulture, or General Science students with a major in Zoology. The work will consist of a careful study of typical examples of each group, collecting, mounting, and classifying in all orders, and the working out of life-histories of injurious species and the application of remedies. Elective to seniors in the Agricultural Course and to others who have completed Course 1. Three hours a week during the first term.

III. BACTERIOLOGY.

1. GENERAL BACTERIOLOGY. Instruction is given in the preparation of culture media, methods of obtaining pure cultures, staining, sterilization, etc. Yeasts and moulds are studied, and air, water and soil examined. Special attention is given to sanitation and the prevention of contagious diseases. Nitrifying organisms and the relation of bacteria to soil fertility are discussed. Required of juniors in the Domestic Science and Agricultural courses, and elective to others. One lecture and six hours laboratory a week during the second term. Three hours credit.

BOTANY.

PROFESSOR HUTT.

1. STRUCTURAL AND SYSTEMATIC BOTANY. The aim of the work in structural and systematic botany is to help students to become familiar with the higher plants, the terms used in describing them, and their classification. Students are provided with microscopes and dissecting instruments for laboratory work, but must furnish their own collecting and mounting outfits. Fifty mounted and named plants are required. Gray and Coulter's *Text-Book of Western Botany*. Required of third year students in the Agricultural and Domestic Science courses. Three hours a week during the second term.

2. PHYSIOLOGICAL BOTANY. Plant anatomy and the functions, growth, and nutrition of plant organs are studied. All laboratory equipment and materials are furnished. Bessey's *Essentials in Botany*. Required of sophomores in the Agricultural and Domestic Science courses; elective to others. One lecture and four hours laboratory a week during the first term. Three hours credit.

GEOLOGY AND MINERALOGY.

ASSISTANT PROFESSOR PETERSON.

1. PHYSIOGRAPHY. This course is intended to develop observation, and give an appreciative knowledge of nature's work in and about the earth. The subjects studied will include:—the earth in space, the structure of the earth, land forms, erosions, lakes and lake basins, glaciation, the sea and its work, the atmosphere and the effect of physiographic conditions on the distribu-

tion and character of life. An effort will also be made to give each student some knowledge of the common rocks. Gilbert and Brigham's text will form the basis of the work. Optional in second year of the College Preparatory Course. Two hours a week throughout the year

2. GENERAL GEOLOGY. The instruction given is intended to familiarize the student with the physiographic changes now in progress and the agencies which produce them, with the origin and structure of the various materials composing the earth's crust, and with the chronological succession of the great formations. A careful study of the development of the North American continent from the earliest time will comprise most of the second term's work. Several field trips will be made and enough field practice given to introduce the methods by which the geological phenomena of a given area may be interpreted. Leconte's *Elements of Geology*, fifth edition, will be used as the text book. Required of seniors in the Agricultural and Domestic Science courses; elective to others. Three hours a week throughout the year

3. STRUCTURAL GEOLOGY. The work in this course will begin with a classification of the common rocks, and a careful study of their characteristics, source and economic value. Work will then be taken up along the lines of structural and topographical geology, with stress laid upon the problems of stratification, cleavage, faulting, disintegration, etc., as it may affect the work of the engineer. Each principle is supplemented by field and laboratory work. Vol. I of Chamberlain & Salisbury's *Geology* will form the basis of the work. Required of juniors in the Civil Engineering Course. Two hours a week throughout the year

4. ECONOMIC GEOLOGY. The object of this course is to give the student some idea of the mineral resources of the United States. The work will include a careful study of the vein-forming minerals, origin of ore deposits, mining terms and methods, the source, production and economic value of iron, gold, platinum, silver, copper, lead, zinc, mercury, tin, aluminum, etc., also the sources, with outlines of the processes of preparation, and econ-

omic value of coal, petroleum, natural gas, asphaltum, building stones, cements, soils, clays, mineral fertilizers, mineral water, fuller's earth, lithographic stone, precious stones, etc. Much of the information will be taken from the Reports of the United States Geological Survey. Elective to students who have completed Courses 2 and 5 and Chemistry 1. Two hours a week throughout the year.

5. MINERALOGY. This course is a systematic study of the common minerals as outlined in Dana's Manual. The student will be required to make a collection of the minerals near the College. Blow pipe analysis and determinative mineralogy constitute the laboratory work. Elective to those who have completed chemistry 1. Two hours a week during the first term.

PHYSICS.

ASSISTANT PROFESSOR CAMPBELL.

1. ELEMENTARY PHYSICS. The object of this course is to enable every student to obtain a practical acquaintance with laboratory methods of work, and with the elementary facts and laws which are the foundation of the science. The lectures are illustrated by experiments performed by the instructor, and many problems are worked in and out of class. The laboratory work consists of numerous experiments, chiefly quantitative, performed by each student. Carhart and Chute's *High School Physics*; Snyder and Palmer's *One Thousand Problems in Physics*. Required of sophomores in the Domestic Science and Commercial courses, and of freshmen in all other courses. Four hours a week throughout the year. Three hours credit. Two sections.

2. GENERAL PHYSICS. This is a more advanced course than Physics 1. Stress is laid on the subjects of mechanics, heat, and electricity. Carhart's *University Physics*, 2 vols. Required of

sophomores in the Engineering courses; elective to others. Four hours a week throughout the year. Three hours credit.

3. DIRECT CURRENT AND MAGNETIC MEASUREMENTS. This course is primarily intended for students specializing in electrical science, but may be taken by others who have the necessary preparation. Most of the work will be in the laboratory, lectures being given from time to time as required. The laboratory work consists of accurate measurements of current strength, resistance, electromotive force, mutual induction, and the magnetic properties of iron. Two hours a week throughout the year.

4. ELECTROMAGNETISM AND ALTERNATING CURRENTS. The methods and aim of this course are similar to those of Course 3. All students in Mechanical Engineering are urged to take Courses 3 and 4 whenever a proper adjustment of their work can be made. Two hours a week throughout the year.

MATHEMATICS AND ASTRONOMY.

PROFESSOR LANGTON.

ASSISTANT PROFESSOR PETERSON.

ASSISTANT PROFESSOR JENSEN.

MR. OSTIEN.

MR. CHRISTIANSON.

NOTE.—The elective courses in Mathematics are not all given each year, but vary from year to year to suit the convenience of students who desire to specialize in mathematical science. Any elective course not applied for at the beginning of the year by at least three students properly prepared may not be given. If applied for by the requisite number of students, additional courses in quaternions, determinants, theory of equations, or projective geometry will be given.

1. ARITHMETIC. This course consists of a thorough treatment of elementary arithmetic. Required of all students in the Sub-Preparatory Course, and of first year students in the Manual Training Courses in Mechanic Arts and Domestic Arts. Five hours a week throughout the year. Four sections.

2. ARITHMETIC AND ALGEBRA. Required of second year students in the Manual Training Course in Mechanic Arts, third year students in the Manual Training Course in Domestic Arts, and first year students in all other courses. Five hours a week throughout the year. Five sections.

(a) *Advanced Arithmetic*. Special attention is given to the nature, origin, and development of number. The class recitation hour is devoted to thorough consideration of the fundamental processes of arithmetic, including contracted methods of multiplication and division, common and decimal fractions, factors and multiples, mensuration, the metric system of weights and measures, square and cube root, proportion, percentage and interest, and practical problems. First term.

(b) *Algebra*. This course includes a thorough treatment of the fundamental operations, use of parentheses, factoring, highest common factor, lowest common multiple, fractions, and simple equations. Second term.

3. ALGEBRA, GEOMETRY. Required of third year students in the Commercial Course and the Manual Training Course in Mechanic Arts, and of second year students in all other courses, except the Manual Training Course in Domestic Arts. Five hours a week throughout the year. Two sections.

(a) *Higher Algebra*. After a brief review of the subjects treated in Course 2 (b), the following subjects are considered: simple equations, inequalities, involution and evolution, theory of exponents, radicals, quadratic equations, ratio and proportion, progressions, and binomial theorem. *The Essentials of Algebra*—Wells. First term.

(b) *Plane Geometry*. This course includes the general properties of polygons; problems of construction, and determination

of areas; regular polygons and circles, with problems in construction, and methods for determining the ratio of the circumference to the diameter; and maxima and minima. Special attention will be given to the development of the power of logical thinking, and of accuracy and conciseness of expression. *The Essentials of Geometry*—Wells. Second term.

4. GEOMETRY, ALGEBRA, TRIGONOMETRY. Required of sophomores in the Agricultural and Domestic Science Courses, of juniors in the Commercial Course, and of freshmen in other courses. Five hours a week throughout the year.

(a) *Solid Geometry*. Wells' *Geometry*. First third of year.

(b) *Advanced Algebra*. This course is a continuation of Course 3 (a), and includes a thorough drill in the most important principles of higher algebra required in the Engineering and other courses. Second third of year.

(c) *Trigonometry*. The deduction of general trigonometric formulæ, the solution of plane and spherical triangles, and practice in the use of logarithmic tables. Lyman and Goddard's *Trigonometry*. Last third of year.

5. ANALYTIC GEOMETRY, CALCULUS. Required of sophomores in the Engineering courses; elective to others who have completed Course 4. Five hours a week throughout the year.

(a) *Analytic Geometry*. The analytic geometry of the straight line, the circle, and the conic sections, including a discussion of the general equations of the second degree, and some special examples in transcendental and higher plane curves.

(b) *Differential Calculus*. The development of the fundamental principles and formulæ of the differential calculus; applications to various problems in plane geometry and analysis, such as indeterminate forms, maxima and minima, curvature, expansions of functions in series, evolutes and involutes, and curve tracing.

(c) *Integral Calculus*. Integration of various forms; development of the formulæ of the integral calculus; application in

rectification of curves, quadrature of plane and curved surfaces, cubature of volumes, etc.

6. DIFFERENTIAL EQUATIONS. This course is arranged to meet the special requirements of engineering students, and includes a treatment of the theory and methods of the solution of total differential equations, with a short introduction to partial differential equation. Required of juniors in the Engineering courses. Three hours a week during the first term

7. MODERN GEOMETRY. This course treats the most important theorems and examples connected with harmonics, anharmonics, involution, projection (including homology) and reciprocation, including the following: harmonic ranges and pencils; conics and focal projections; anharmonic ratios; homographic ranges; anharmonic properties of points on a conic, of tangents of a conic; poles and polars; reciprocation; properties of triangles; Pascal's and Brinchon's theorems, homographic ranges on a conic; ranges and pencils in involution; involution of conjugate points and lines; involution range on the conic of a quadrangle and of a quadrilateral; constructions of the first and second degree; the principle of continuity; circular points and lines; real and imaginary projection, generalization by projection; homology. Cremona's *Projective Geometry*; Russell's *Treatise on Pure Geometry*; Lachlan's *Modern Pure Geometry*. Elective to those who have completed Course 5. Five hours a week throughout the year.

8. PLANE AND SOLID ANALYTIC GEOMETRY, ADVANCED COURSE. This course includes the equations and properties of the point, right line, and plane, of the sphere, cylinder and cone, and of the paraboloids, ellipsoids, and hyperboloids the modern algebraical methods of the conic sections; a short discussion of the general theory of higher plane curves and surfaces; applications of the differential and integral calculus to problems involving functions of two or more variables, such as development in series and transformation of functions, curvatures, areas of surfaces, volumes of solids, etc. The work of this course will consist

of the discussion of portions of Salmon's *Conic Sections*, *Higher Plane Curves*, and *Analytic Geometry of Three Dimensions*. Elective to students who have completed Course 5. Five hours a week throughout the year.

9. DIFFERENTIAL AND INTEGRAL CALCULUS, ADVANCED COURSE. This course embraces the elements of the theory of functions of imaginary variables; the various methods of integration, systematically treated; the elements of the theory of the elliptic functions; the mechanical and geometrical applications of the calculus treated more fully than in Course 5; and some of the more important cases of differential equations. Todhunter's *Differential Calculus* and Williamson's *Integral Calculus*. Elective to students who have completed Course 5. Five hours a week throughout the year.

10. HISTORY AND PHILOSOPHY OF MATHEMATICS. This course deals with the origin, development, and logical relation of the various subjects of mathematical science, including a series of synoptic lectures, which may be roughly outlined as follows: mathematics among the ancients; Descartes and the discovery of analytic geometry; Newton, Leibnitz, and the calculus; Hamilton and the invention of quaternions; modern geometry; mathematics and mathematicians of the United States. Ball's *History of Mathematics*. Comte's and Bledsoe's *Philosophy of Mathematics*, the *Encyclopedia Britannica*, and other works of reference. Elective to students who have completed Course 9. One hour a week throughout the year.

11. GENERAL ASTRONOMY. This course deals with the general facts and principles underlying the science of astronomy, with solutions of many problems, particularly those relating to the determination of latitude, longitude, and time. Instruction is given by means of recitations and lectures. Young's *General Astronomy*. Elective to students who have completed Course 4. Two hours a week throughout the year.

12. PRACTICAL ASTRONOMY. A continuation and completion of Course 11. Theory and use of instruments—sextant, transit

instrument, zenith telescope, and equatorial; various methods of determining longitude and latitude; graphical methods of predicting eclipses, etc. Doolittle's *Practical Astronomy*; Clarke's *Geodesy*. Elective to those who have completed Courses 5 and 11. Two hours a week throughout the year.

ENGLISH LANGUAGE AND LITERATURE.

PROFESSOR UPHAM.

MR. CAINE.

MISS MOENCH.

MISS WYANT.

MISS AMANDA HOLMGREN.

1. GRAMMAR AND COMPOSITION I. This work includes: orthography; the parts of speech; the construction, analysis, and punctuation of easy sentences; the correction of common errors in language; and the writing of brief compositions. The written work is in part suggested by the text book, and in part correlated with the lessons in reading and in geography. Hyde's *Two Book Course, Book II*, and Strang's *Exercises in English* for sections 1 and 2; Whitney and Lockwood's *English Grammar* for sections 3 and 4. Required of all Sub-Preparatory students. Five hours a week throughout the year. Four sections.

2. READING AND SPELLING. In this work there are several ends in view. The pupil is carefully trained to understand and appreciate what he reads, and at the same time particular attention is given to developing a vocabulary and forming a habit of correct expression. Written summaries and reproductions are required and due care is given to spelling. The reading is as follows: sections 1 and 2;—Dickens—*Christmas Carol*, Lowell—*Vision of Sir Launfal*, Coleridge—*Ancient Mariner*, Lamb—*Ulysses*, Hawthorne—*Great Stone Face*, Stevenson—*Treasure Island*, Cooper—*Last of the Mohicans*. Sections 3 and 4;—Eliot

—*Silas Marner*, Pope—*Homer's Iliad*, Shakespeare—*Merchant of Venice*, Burroughs, Warner and Thoreau—*Essays*, Dickens—*Tale of Two Cities*, Lytton—*Last Days of Pompeii*. Required of all Sub-Preparatory students. Five hours a week throughout the year. Four sections.

3. GRAMMAR AND COMPOSITION II. The study of grammar is completed in this course. There is a thorough review of the parts of speech, and attention is given to the principles of syntax, and to the construction and analysis of sentences. Later in the year an elementary text-book in rhetoric is introduced, and the student is drilled in the correct use of words and sentences. Material for composition work is drawn from the text-book, and from the lessons in English Classics and U. S. History. Kimball—*The English Sentence*; Gardiner, Kittredge, and Arnold—*The Mother Tongue, Book III*. Required of all first year students, except in the Manual Training courses. Five recitations a week throughout the year. Four hours credit. Five sections.

4. ENGLISH CLASSICS. Addison—*Sir Roger de Coverley*, Macaulay—*Essay on Johnson*, Milton—*Minor Poems*, Shakespeare—*Julius Caesar*, Tennyson—*Idylls of the King*, Scott—*Ivanhoe*, Goldsmith—*Vicar of Wakefield*. This course aims at a thorough understanding of the material, and encourages the student in giving his own expression of the thoughts there found. The elementary qualities of style are explained and illustrated. Occasional written exercises are required, and memory passages are assigned. Required of all first year students, except in the Manual Training courses. Two hours a week throughout the year. Five sections.

5. RHETORIC AND COMPOSITION. It is intended to make this an extremely practical course in the writing of English. Lectures and recitations, based on an advanced text-book, give continued attention to the principles of rhetoric. The reading of prescribed pieces of prose and poetry, in and out of class, affords contact with the best models. The composition work proper consists of at least three short exercises a week, more or less related

to the other work of the course. A longer theme is required each month. These exercises are criticised and returned, and private conferences are given the writers as often as possible. Adams Sherman Hill—*The Principles of Rhetoric*; Milton—*Paradise Lost, Books II and III*; Macaulay—*Essay on Milton*; Shakespeare—*Macbeth*; Burke—*Conciliation with America*. Required of all second year students except in the Manual Training courses. Five hours a week throughout the year. Two sections.

6. THE HISTORY OF ENGLISH LITERATURE. A general survey of the progress of English literature from the Anglo-Saxon period to the present time. Important movements and significant authors are studied at considerable length, with due attention to social and political relations, and to contemporary foreign literature. The work is carried on by lectures and recitations, a large amount of work being prescribed for reading and discussion. Simonds' *Student's History of English Literature* is used as a text-book. Required of sophomores in Agriculture and of freshmen in all other courses. Three hours a week throughout the year. Two sections.

7. ADVANCED RHETORIC. This course aims to combine various essential features of training in English, for which no opportunity has been previously afforded. During the first half-year, two hours a week are given to the history and principles of literary criticism, and to the forms of prose discourse, placing considerable emphasis on argumentation. One hour each week is devoted to instruction in public speaking, which in the second half-year gives place to practical debating. The recitation work of the second term deals with the English language, being chiefly concerned with the following points:—the history of the language; the development of the literary language from a dialect; the sources of our vocabulary; the processes of change in the meaning of words. *Specimens of Prose Composition* (four volumes), published by Holt and Co.; Clark and Blanchard—*Practical Public Speaking*; G. P. Baker—*Principles of Argumentation*; Greenough and Kittridge—*Words and Their Ways in English Speech*. Required of

juniors in the Agricultural, Domestic Science and Commercial courses, and of General Science students. Three hours a week throughout the year.

8. THE ELIZABETHAN MOVEMENT. This course offers an opportunity for more advanced work in one particular period of English literature. Beginning with the rise of the Renaissance spirit in England, it will give particular attention to the drama of Shakespeare and his contemporaries, and then follow the decline of the movement to the Closing of the Theatres, 1642. If possible, the Restoration period will be studied in its relation to this movement. Lectures, prescribed reading, and theses. Elective. Two hours a week throughout the year.

9. THE ROMANTIC MOVEMENT. Similar to English 8 in method and requirements. English Romanticism is considered from its reactionary beginnings at the middle of the eighteenth century to its diffusion among the writers of the Victorian period. Foreign parallels and influences are carefully noted. Elective. Two hours a week throughout the year. Omitted in 1904-5.

10. CHAUCER AND SHAKESPEARE. This is a course in careful detail study. The first term is devoted to Chaucer's *Canterbury Tales*, including the Prologue. Matters of grammar, pronunciation, sources, social and political allusions, and literary art, all receive attention. Prominence is given to Chaucer's place in the development of the language. The second term is occupied with the interpretation of four plays of Shakespeare in somewhat the same manner.

11. ANGLO-SAXON AND MIDDLE ENGLISH. This course is designed to furnish a basis for advanced study of the English language, and to acquaint the student with early literature in English. The text-book in Anglo-Saxon is Bright's *Anglo-Saxon Reader*; that in Middle English is Emerson's *Middle English Reader*. Elective. Three hours a week throughout the year. Omitted in 1904-5.

12(a) AMERICAN LITERATURE. This course deals with the

literary works produced in America from the foundation of the colonies to the present time, particular emphasis being given to the past century. The contemporary development in England is constantly kept in view. Lectures, prescribed reading, and reports. Elective. Three hours a week during the first term.

(b) VICTORIAN POETS. A course of detailed study for those who have a general knowledge of these poets and wish to consider them at their best. Particular attention is given to Browning and Tennyson. Elective. Three hours a week during the second term.

13. ELOCUTION I. This course includes class-room work in voice-culture, gesture, and the principles of expression. The memorizing, interpretation, and delivery of a number of selections are required. Clark and Chamberlain's *Principles of Vocal Expression and Literary Interpretation* is used as a text book. The reading comprises: Arnold's *Sohrab and Rustum*; Rostand's *Cyrano de Bergerac*; Sheridan's *School for Scandal*. Elective to students who have completed English 4.

14. ELOCUTION II. The advanced course in Elocution is intended for those who have completed the elementary work and desire to continue under individual instruction. The student may choose between two lines of work. One of these includes a further study of the general laws of expression and the principles of art; the cutting of short stories, novels, and plays for public reading; the interpretation and presentation of more advanced readings. Hauptman's *Sunken Bell*, and Shakespeare's *King Lear* and *As You Like It* will be read. The other line of study is intended to prepare for public speaking. Representative English and American orations will be studied for correct delivery, and effective passages will be analyzed. Original work will be required in the toast, short speech, formal address, and debate. Special study will be made of Shakespeare's *Coriolanus* and *Julius Caesar*.

MODERN LANGUAGES AND LATIN.

PROFESSOR WILSON.

MR. ARNOLD.

The elementary courses in this department aim to give the student an accurate knowledge of the grammar of the language studied; the ability to translate with readiness from English and into English; and the ability to understand the spoken language and to converse upon simple topics, with proper pronunciation. To attain this end the language studied is as far as possible made the language of the class room; specimens of lyric poetry are committed to memory; much practice is afforded in prose composition both oral and written; and grammar is studied throughout the course.

The more advanced courses, besides affording further opportunities for linguistic discipline and literary culture, aim to prepare the student for independent and progressive work in some more particular department of the literature of the language studied.

GERMAN.

1. FIRST YEAR GERMAN. Becker's *Elements of German*; Mueller and Wenkebach's *Glueck Auf*; Zschokke's *Der Zerbrochene Krug*; Arnold's *Fritz auf Ferien*. Exercises in composition. Familiar poems memorized. Oral and written reproduction of the substance of selected passages from readings. Course 1 is intended for those beginning the study of the language. Optional with French and Spanish in the Commercial Course, and with French in all other College courses. Five recitations a week throughout the year. Three hours credit.

2. SECOND YEAR GERMAN. Grammar completed and reviewed; Harris' *German Prose Composition*. Rapid reading of narrative prose:—Gerstaecker's *Germelshausen*; Storm's *Immensee*;

Hauff's *Das Kalte Herz*; *German Science Reader*; Benedix's *Der Prozess*; Schiller's *Wilhelm Tell*. Optional as Course 1. Three hours a week throughout the year.

3. THIRD YEAR GERMAN. Study of German literature; the classic period. Lessing's *Minna von Barnhelm*; Goethe's *Hermann und Dorothea*; and *Götz von Berlichingen*; Freytag's *Verlorne Handschrift*; history of German literature; advanced composition. Open to those who have completed Courses 1 and 2 or an equivalent. Three hours a week throughout the year.

4. SCIENTIFIC AND HISTORICAL GERMAN. The work in Scientific German consists of the translation of German scientific monographs by Cohn, Weismann, Helmholtz and other German scientists; Hodge's *Scientific German*. The work in Historical German consists of the rapid translation of modern historical and economic German as found in leading German magazines. Open to those who have completed Courses 1 and 2 or an equivalent. Two hours a week throughout the year.

FRENCH.

1. FIRST YEAR FRENCH. Fraser and Squair's *French Grammar, Part I*; François and Giroud's *Simple French*; Halevy's *L'Abbé Constantin*; Dumas' *La Tulipe Noir*. Course 1 is intended for beginners in French. Stress is laid upon the acquisition of a correct pronunciation. Exercises in grammar, composition, and conversation are made subservient to the attainment of a full and accurate reading knowledge of the language. Optional with German or Spanish in the Commercial Course and with German in all other courses. Five recitations a week throughout the year. Three hours credit.

2. SECOND YEAR FRENCH. Fraser and Squair's *French Grammar*; Daudet's *Tartarin de Tarascon*; Hugo's *Berg Jargal*; Augier's *Le Gendre de M. Poirier*; Bowen's *French Lyrics*; *French Science Reader*. Advanced composition; writing from dictation; exercises in conversation. Open to those who have

completed Course I or an equivalent. Optional as Course I. Three hours a week throughout the year.

3. THIRD YEAR FRENCH. French Literature; Moliere's *L'Avare*; Corneille's *Le Cid*; Racine's *Andromaque*; La Fontaine's *Fables*; Hugo's *Hernani*; Rostand's *Cyrano de Bergerac*; History of French Literature. Translation of selected English prose; exercises in conversation. Open to those who have completed Courses I and 2 or an equivalent. Three hours a week throughout the year.

4. SCIENTIFIC AND HISTORICAL FRENCH. Translation of monographs on scientific subjects by recent French writers as contained in standard French scientific magazines; sight reading and rapid translation of topics from French writers on history and economics. Open to those who have completed Courses I and 2 or an equivalent. Two hours a week throughout the year.

SPANISH.

1. FIRST YEAR SPANISH. Giese's *First Spanish Book and Reader*; exercises in conversation and composition; Matzke's *First Spanish Readings*; Valdés' *José*; Tamayo y Baus' *Un Drama Nuevo*. Optional with French or German in the Commercial Course. Five recitations a week throughout the year. Three hours credit.

2. SECOND YEAR SPANISH. *Spanish Grammar* completed; advanced Prose Composition; exercises in conversation; Ramsey's *Text Book in Modern Spanish*; Alarcón's *El Capitan Veneno*; Lope's *Estrella de Sevilla*; Galdó's *Dona Perfecta*; Zorilla's *Don Juan Tenorio*. Open to those who have completed Course I or an equivalent. Optional as Course I. Three hours a week throughout the year.

LATIN.

The following courses in Latin are offered to students in

three year courses, and to students in College courses who have not presented parallel courses as entrance requirement.

1. FIRST YEAR LATIN. Collar and Daniell's *First Year Latin; Viri Romae*. Drill on essentials of Latin grammar; comparison with English grammar; acquiring of vocabulary; English words derived from Latin; selections for reading. Five hours a week throughout the year.

2. SECOND YEAR LATIN. Greenough, D'Ooge and Daniell's *Second Year Latin*; D'Ooge's *Latin Composition based on Caesar*; Bennett's *Latin Grammar*; selected readings from Part I, *Second Year Latin*; an equivalent of four books from selections from Caesar; oral and written composition. Attention is given to etymology of English derivatives and cognates; accuracy and facility in translation into idiomatic English; sight translation. Open to students who have completed Course I. Five hours a week throughout the year.

3. THIRD YEAR LATIN. Cicero's Orations:—four against Catiline; Oration in behalf of the Poet Archias; Pompey's Military Command. Advanced composition based on connected passages; study of the life and time of Cicero; sight translation. Open to those who have completed Courses I and 2 or an equivalent. Three hours a week throughout the year.

4. FOURTH YEAR LATIN. Virgil's Aeneid; study of meter and versification; vocabulary and grammar of the poet; Virgil's life and friends; comparison of the great epic poems of Homer, Virgil, Dante and Milton; comparison of translations; passages from the Aeneid translated into English in the meter of the original; sight reading; advanced prose composition. Open to those who have completed Courses I, 2, and 3, or an equivalent. Three hours a week throughout the year.

HISTORY.

PROFESSOR ENGLE.

MISS FISHER.

1. GREEK AND ROMAN HISTORY. This course is intended chiefly as an introduction to Greek and Roman history. Thorough text-book work is required. Such reading is done as is necessary to supplement the text. It is the purpose of this work gradually to give the student broader views of history, and thus lay the foundations for advanced work in United States history. In this course the lines of historical study usually followed will be taken up. Greek history occupies the first term, Roman history the second. West's *Ancient History* is the text. Required of first year students in Domestic Science, Commerce, and College Preparatory courses. Five sections, three hours a week throughout the year.

2. UNITED STATES HISTORY I. This course includes a study of social life, economic conditions, political development, literary beginnings, and historical literature. Lectures are occasionally given. Library work is encouraged. The text is Channing's *Student's History*. Required of second year students in the Domestic Science and College Preparatory courses, and third year students in Manual Training in Domestic Arts. Two sections, three hours a week throughout the year.

3. UNITED STATES HISTORY II. This course includes the history and interpretation of our national constitution, the relation of our state constitutions to the national government, governmental forms, supreme court decisions as influencing the course of our government, and a careful survey of all those features in American history necessary to intelligent citizenship. Cooley's *Constitutional History* and Fiske's *Civil Government*. Required of second year students in Agriculture, and fourth year students

in Mechanic Arts. Three hours a week throughout the freshman year.

4. AMERICAN HISTORY. In this course an attempt is made to develop the history of North America and of South America as an integral whole. Historical details of individual nations are subordinate to comprehensive views of the relations existing between nations. As far as practicable, the history of North America is organized in relation to United States History, while that of South America is developed in relation to Brazil and Chili. Elective to juniors and seniors in the Commercial Course.

5. ENGLISH HISTORY. In this course racial traits, literary development, constitutional growth, social life at different stages, English conservatism, origins, contributions, colonial systems, art, architecture, and pauperism are some of the topics discussed. A leading aim in the course is to teach the philosophy of history concretely. Research work is an important feature. Montgomery's *History of England*. Elective to those who have completed Course 1. Three hours a week throughout the year.

6. MODERN EUROPEAN HISTORY. This course includes a discussion of European history from Charlemagne to the present time. Among the topics discussed are consolidated monarchies, the balance of power, the French Revolution, formation of the German Empire, development of the Swiss Confederation, the Napoleonic wars, etc. West's *Modern European History* is the text. Required of second year students in Commerce. Three hours a week throughout the year.

7. PHILOSOPHY OF HISTORY. This course deals with causal relations, fundamental principles, comparative discussions of civilizations, historical values, relation of geography and history, historical sources, and appropriate tests of the truthfulness of data. Droysen's *Principles of History*. Elective to those who have completed Courses 1, 2, 5 and 6. Three hours a week during one term.

DRAWING.

MR. STUTTERD.

MR. PULLEY.

1, 2, 3. **FREE-HAND DRAWING.** These courses are purely individual, and are varied to meet the needs of the line of work the student is pursuing. Required of first year students in the Agricultural and College Preparatory courses, of second year students in the Manual Training Course in Mechanic Arts, and, during the first term, of third year students in the Domestic Science course. Five hours a week throughout the year. Two hours credit. Each course subdivides into the following parts:

(a) *Elementary Drawing.* This work includes drawing with charcoal, pencil, or pen and ink, in outline, mass, or light and shade, from simple objects, casts, flowers, plants, birds, animals, etc. Study of the simple principles of light and shade, proportion, perspective—both linear and aerial—textures, color, etc.

(b) *Advanced Drawing.* This includes the same principles applied to higher forms. Drawing from casts of the full length figure; sketching from nature—human, animal and landscape. The Agricultural students draw from the different breeds of livestock. Painting in water color or pastel from objects, flowers, plants, birds, animals, etc.

(c) *Design. The Applied Arts.* Principles of art in every day things. Study of the composition of line, tone, and color applied to products of the different crafts, as tiles, pottery ware, textiles, ceramics, wall-papers, mosaics, bookcovers, etc. Planning and development of original motives and patterns by the students. Creating decorative forms from geometrical figures; selecting, conventionalizing and arranging flowers, birds, animals and the human figure. Study of historic design. The Domestic Science students do designing for lace work, embroideries, rugs, tablecloths, etc.; the principles of art applied to household deco-

ration. Mechanic Arts students make designs for carved wood, wrought iron, stained glass, etc.

(d) *Composition. The Fine Arts.* Study of the composition of line, tone, and color applied to architecture, sculpture and painting. Original compositions by the students, using as motives objects, flowers, plants, birds, animals, human figures, and landscape forms. Study of the works of the masters, with consideration given to conception and execution.

4. SPECIAL WORK IN ART. Open to those who have taken a general course and wish to follow some particular line. This includes drawing in all mediums; modeling; painting in oil, water color, and pastel; designing and composition, in their different branches. Three hours a week throughout the year.

5. MECHANICAL DRAWING. This is the introductory course in mechanical drawing for students taking the Manual Training Course in Mechanic Arts. It consists of simple projections—orthographic, isometric and oblique, and linear perspective. These are illustrated as far as possible by making working drawings of the simpler exercises of the shop work. Required of third year students in the Manual Training Course in Mechanic Arts, who have completed Course 2. Six hours a week throughout the year. Two hours credit.

6. DRAWING AND DESIGN. In this course the work is adapted to the line of shop work which the student is pursuing. It is intended to give practice in design with consideration of proper proportion for strength as well as for aesthetic qualities. In this course the student is expected to make his own designs for his work in the shops. Required of fourth year students in the Manual Training Course in Mechanic Arts who have completed Drawing 5. Six hours a week throughout the year. Three hours credit.

LIBRARY WORK.

MISS SMITH.

The subject includes the study of general reference books, such as encyclopedias, dictionaries, atlases, cyclopedias of special subjects, indexes to periodicals and general literature, handbooks of information and public documents. Talks will be given on classification and cataloguing of the books in the library, explaining their arrangement on the shelves and the use of the card catalogue. Practical questions will be given to the students to be looked up in the reference books. The object of the course is to familiarize the student with the library and to teach one how to obtain information quickly. Required of freshmen in the General Science Course. Elective to others. One hour a week throughout the year.

GEOGRAPHY.

PROFESSOR ROBINSON.

To get an intelligent conception of the natural resources of countries, the physical features receive special attention. Astronomical and geological features are presented as far as the course will permit. The principal changes that have wrought the present conditions are studied, and the atmosphere and water receive attention. Map drawing and frequent reviews are features of the course. Commerce in its effect upon nations is considered, as are also the classifications of mankind, animals, and plants. Required of all students in the Sub-Preparatory Course, and of first year students in the Manual Training Course in Mechanic Arts. Four sections; three hours a week throughout the year

PENMANSHIP.

MR. BANKHEAD.

1. This course aims to develop a practical handwriting. Much stress is laid on movement, position of hand and body, etc. Beginning with easy movement drills, the student is led into more difficult exercises, completing with words and short disconnected sentences. Required of all students in the Sub-Preparatory Course, and of first year students in the Manual Training Course in Mechanic Arts. Three sections, daily. Two hours credit.

2. A somewhat advanced course designed especially for Commercial students who have the principles of Course 1 well grounded. Commercial correspondence is made a special feature. Artistic writing, lettering, and engrossing receive attention. One hour credit. Optional with typewriting.

MUSIC.

*_____

The courses in Music are planned to follow two lines: the individual instruction required in theory, voice culture, piano, etc.; and the training afforded by the choral society and other musical organizations. An ample and efficient instructing force is being provided, which will make possible the highest grade of private instruction, both in theory and technique. Graded courses will be offered in harmony, vocal music, piano, violin, mandolin and guitar.

During the year, the present musical organizations will be enlarged and improved under immediate direction of the department, and others will be added as found desirable. The choir will be organized as a Choral Society, with the purpose of rendering larger choral work, the study of which forms so important a part of the culture of larger communities. Both the orchestra and the band will be reorganized on the most modern lines, and private instruction on the various instruments will be offered those not ready for advanced training. Quartettes, glee clubs, and mandolin and guitar clubs will be organized.

In order to create as perfect a musical atmosphere as possible, the faculty, assisted by visiting artists, will give a series of concerts, the programs being arranged from the work of the great masters. These will be free to all students; and, with the students' recitals and band and orchestral concerts, will provide opportunity for musical culture and pleasant recreation for all connected with the college.

*A Professor of Music and three assistants will be employed during the summer.

MILITARY SCIENCE AND TACTICS.

COMMANDANT,—CAPTAIN HENRY D. STYER, U. S. ARMY

COMMISSIONED OFFICERS FOR 1903-4

Captains,—Frank D. Thatcher and Thomas Johnston.

First Lieutenants,—F. R. Jenson,—Adjutant; W. J. Burton,
—Quartermaster; J. H. Holmes, and E. A. Jacobs.

Second Lieutenants,—G. H. Lowe and J. R. Pugmire.

All male students of the College, except those physically disabled, are required to take the prescribed work in the military department, which may be completed in two years. The course consists of practical instruction in infantry drill, including the school of the soldier; company and battalion drill; target practice, for which the government makes an annual allowance of ammunition; instruction in first aid to the injured; practice marches; and a summer camp, modeled after the encampments held by the regular army and our National Guard.

Theoretical instruction by recitations and lectures is given on military subjects during the winter term, according to regulations issued by the War Department. The government furnishes rifles for infantry drill and two three-inch cannon for artillery instruction. A uniform, consisting of cap, dark blue blouse and trousers, and white gloves, must be worn by the cadets. Arrangements have been made by which this uniform can be obtained through the Secretary of the College at actual cost, about \$13.00. Cadets are required to wear the prescribed uniform when at drill or receiving any military instruction. 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 that all students must be prepared to order the uniform when they enter.

Regular drill and instruction occurs five hours a week. That the benefit derived from this course is appreciated today more than ever, is shown by the fact that nearly a hundred of our higher institutions of learning throughout the country have military departments in charge of an officer of the regular army.

ATHLETICS AND GYMNASTICS FOR WOMEN.

MISS MOENCH.

All women students of the College are required to have two years of physical training. Each student receives the personal attention of the instructor. Anthropometric charts are made out, and exercises to meet the individual needs of the students are prescribed. In addition to the special work, regular class work is given, and once a month the students meet for instruction on topics pertaining to health, physical education and social decorum.

It is necessary for each student to have a suit consisting of divided skirt, blouse, and slippers with rubber soles. The entire costume is ordered by the College and furnished to the student for actual wholesale cost. The student is thus saved the labor of making the suit, and is assured of a costume well made, neatly fitting, comfortable, and serviceable. Students are expected to come prepared to order suits immediately upon entering the College. The cost of the suit, including slippers, is about \$4.

I. JUNIOR GYMNASTICS. Students who have had no gymnasium training are registered in this course. The aim of the work is to overcome physical defects, to establish a correct carriage of the body, to produce symmetrical development, to strengthen the muscles, and to relieve the tension of brain work; as well as to acquire a thorough knowledge of gymnastic nomenclature. The exercises in this course are adapted from the Ger-

man and Swedish systems of gymnastics, with simple exercises with light apparatus, military marching, and Gilbert steps.

2. SENIOR GYMNASIUMS. Students who have had first year work in the College gymnasium, or who have had its equivalent elsewhere, are admitted to the senior class. The aim of this course is to strengthen the results already accomplished and to produce elasticity, poise, grace, and ease of manner. More difficult exercises are given in the light apparatus; together with drill with heavy apparatus; advanced movements in the Swedish and the German systems; Delsarte, Grecian and modern dances; minuet; etc.

3. ATHLETICS. All women who are not engaged in gymnasium work are urged to elect one course in Athletics; e. g., Basket Ball, Tennis, Bowling, Fencing, etc.

Winter Courses.

AGRICULTURE.

1. AGRONOMY. This course will embrace a discussion of the following topics: the atmosphere as a source of plant food; the soil—its formation and classification, the compounds it contains as sources of plant food; the plant—how it grows, feeds, and matures, and the animal food product it yields; how to maintain the fertility of Utah soils; rotation of crops; irrigation in its relation to the production of crops. Five hours a week.

2. JUDGING AND MANAGEMENT OF LIVE STOCK. A discussion of the various types of live stock; their adaptability for various purposes on the farm, and the principles involved in their improvement. As much time as possible is given to the practical handling and judging of the living animals on the College farm. Craig's *Judging Live Stock*. Five hours a week.

3. FEEDING LIVE STOCK. The principles underlying the successful feeding of live stock on the farm and the practical applications to Utah conditions. Jordan's *Feeding Animals*. Five hours a week.

4. DAIRYING. A discussion of the composition and properties of milk; milk testing; milk fermentation, etc. The manufacture of butter and cheese is fully explained. Wing's *Milk and Its Products*. Five hours a week.

5. DAIRY PRACTICE. Those who wish to specialize in dairying have opportunity for ample practice in the College dairy, which is well equipped with modern apparatus.

6. POULTRY. The instruction covers breeds of poultry, foods and feeding, buildings and management. Where desired, arrangements can be made for practice in operating incubators. Five hours a week.

7. HORTICULTURE. The subject of horticulture is treated in a course of lectures covering the following subjects: selection of varieties; soil adaptation; preparation for planting; care and cultivation; commercial orcharding; picking, packing, and marketing fruit; orchard disinfection, including a careful study of prevalent orchard diseases and injurious insects, and the means of combating them; pruning of trees and treatment of tree wounds, to be demonstrated by practical work in the College orchard; top-grafting of mature trees; orchard irrigation and conservation of moisture; drainage of orchard lands; fertilization of trees for growth and for fruit, etc. Five hours a week.

8. ECONOMIC ENTOMOLOGY. This course is designed as an introduction to the more advanced work in entomology. In addition to the lectures and text-book work, students receive some training in the use of the microscope. Special attention is given to the general principles involved in dealing with injurious insects. Five hours a week.

9. VETERINARY SCIENCE. Instruction is given on how to locate and detect the more common ailments of our domestic animals, and methods of prevention and curing are discussed. Those diseases most frequently met with in this inter-mountain region receive special attention. Consideration is given to ideal sanitary conditions for different animals; and common errors are pointed out and corrections suggested. Students taking this course are expected to attend the clinic each Monday. Five hours a week.

10. IRRIGATION. Lectures on application of water, duty, seepage, evaporation, etc. Units for measurement of water, methods of subdivision and measurement, and other subjects relative to the irrigation interests on the farm. Five hours a week.

11. FARM ACCOUNTING. The importance and necessity of keeping accounts on the farm are emphasized. Methods are discussed and developed. Business forms and customs are studied, and after the underlying principles have been mastered, practical work in accounting is given. Five hours a week.

DOMESTIC SCIENCE AND ARTS.

1. COOKING LECTURES. Preceding the cooking practice one lecture is given each day. These lectures treat of the composition of foods and the general chemistry of cooking; rules for measuring and mixing; best methods of baking and boiling; deep and shallow frying; marketing and the selection of food; carving and serving food. The study of bills of fare, nutritive value of different foods, and of foods that are appropriately served together, is included in this course. The regular time allowed each class for practice is two two-hour periods a week. Special arrangements will be made, however, for those who wish to devote more time to this course; also for those who wish to perfect themselves in any particular line of cooking. Five hours a week.

2. COOKING PRACTICE. This course includes practice in all kinds of plain and pastry cooking, and some fancy cooking and confectionery making. Demonstration lessons are given on breakfast breads and hot cakes; croquettes of various kinds; dressing for fowls; boning, skewering, and larding meats; braizing, roasting, broiling, and other methods of cooking meats; the preparation of soups, sauces, salads, and salad dressing, together with other subjects difficult of treatment in class practice. A three course lunch is served daily throughout the term by the members of the cooking classes. The young ladies take turns in presiding at the table as hostess, and also in waiting upon the table. The skill and confidence that they acquire by this practice is of great value to them. Four hours a week.

3. HYGIENE. Lectures are given on the sanitary conditions best for the home; the danger from damp and unclean cellars; foul drains and sinks; the necessity for pure air and sunlight in the house. Talks are given on diet; regularity of habits; the necessity for a regular and sufficient amount of sleep; the care of personal health; home nursing and hospital methods. There

are illustrative lessons on changing beds for the sick. Three hours a week.

4. SEWING. This course includes hand and machine sewing, the students completing as much of the work outlined in Courses 1 and 2 in Sewing as they can do successfully in the time allowed for the work.

5. DRESSMAKING. Gowns are cut out, basted, and entirely made by the students. Students furnish material and make their own garments. Five hours a week.

6. DESIGNING, CUTTING, AND FITTING. Instruction is given by talks on grace in design of costumes and harmony of colors. Special attention is given to hygienic modes of dress. The students are taught to make drawings of the costumes they design; they also learn to draft patterns from measurements. Further practice is given in cutting and fitting. Five hours a week.

7. FANCY WORK. This course includes Kensington embroidery, Roman cut work, Spanish laid work, drawn work, jeweled embroidery, and modern lace making. Five hours a week.

8. DAIRYING. Instruction in cheese and butter making, on both the factory and home dairy plans, is given in the College dairy. For lectures and plan of work, see Agricultural Course.

MECHANIC ARTS.

1. CARPENTRY A. Rudimentary exercises in sawing, ripping, planing, mortising, dovetailing, and joinery, furnish the details of this course. Correct methods of using and handling tools are emphasized. Fifteen hours a week.

2. CARPENTRY B. Sharpening and adjusting carpenter's tools, and saw filing, followed by simple cabinet work, constitutes the work of this course. Fifteen hours a week.

3. FORGING A. This course consists of preliminary exercises, such as drawing, bending, twisting, and shaping, and weld-

ing and making iron tools. Accuracy in methods and results is insisted upon. Fifteen hours a week.

4. **FORGING B.** The work of this course consists of practice in steel and iron welds, steel and steel welds, and general work in steel tool forging and dressing. Chisels, punches, reamers, hammers, tin shears, nippers, etc., are sample exercises. Prerequisite, Forging A. Fifteen hours a week.

COMMERCE.

1. **BOOKKEEPING.** An elementary course in the principles of accounting by single and double entry. Drill in commercial arithmetic, penmanship, business customs, etc. For further description see Accounting 2, of which this is a modified course. Ten hours a week.

2. **BUSINESS FORMS.** The fundamental principles of accounting are applied in this course by means of practical work in the use of different forms and blanks pertaining to actual business. Given in connection with Accounting 1. Five hours a week.

3. **COMMERCIAL LAW** A study of the nature of law, common and statutory law, contracts, agency, bailments, bankruptcy and insolvency, insurance, negotiable papers, partnership, corporations, etc. Two lectures a week.

4. **PENMANSHIP.** See Penmanship 2.

THE SUMMER SCHOOL.

The College maintains, as an integral part of its work, a summer session, beginning on the second Monday following Commencement Day, and continuing for five weeks. Every department of the College is represented, the courses of instruction being arranged to meet the peculiar needs of summer students. For the benefit of teachers, special courses are provided in pedagogy, psychology, sloyd, and nature study, in addition to the regular work in Agriculture, Domestic Science, etc. College students desiring to make up conditions or prepare for advanced work are given all assistance possible. The entire equipment of the institution is available for the summer session, and every care is taken to preserve the standard and the spirit of the College. No admission requirements are prescribed, but students in all departments are directed by instructors to those courses in which they may pursue work to the best advantage. No one is advised to elect more than four courses. Students will receive such credits on the College register as the quality and amount of work done may warrant. Arrangements have been made with County Superintendents throughout the State to accept summer school credits in individual subjects in lieu of examination. In addition to the routine work of the session, a course of daily lectures is provided, appealing both to teachers and to the general public, and covering a wide range of interesting subjects. A matriculation fee of five dollars admits to any and all work offered, including the special lectures. Board and rooms can be secured throughout the city at the usual prices, and the College Dormitory also is open to summer students at a nominal rate.

ACKNOWLEDGMENTS.

The College acknowledges indebtedness for the following gifts received in the various departments during the past year:

LIBRARY.

	BOOKS	PAMPH- LETS.
Agricultural Experiment Stations	1	59
Bernard, M., Argentine Republic	1	
Clark University, Worcester		5
Clearing House Association, Boston		1
Clearing House Association, Chicago		1
Clearing House Association, New York		2
Clearing House Association, Philadelphia		2
Charity Organization Society of New York City	2	
Deseret News, Salt Lake City	1	
Fisk & Robinson, Boston	1	
Harper Bros. & Co., New York	1	
Lake Mohonk Arbitration Conference.....	1	
Library Bureau, Chicago	1	
McClurg & Co., A. C., Chicago	1	
Michigan State Farmers' Institute.....	4	
Mutual Life Insurance Company of New York.	7	
National Educational Association	1	
National Convention of Insurance Commiss'ners	1	
National Irrigation Congress, Ogden	2	
National Sound Money League, N. Y.	1	
Nebraska Public Library Commission, Lincoln.	48	23
New York Life Insurance Company	2	
New York National City Bank, N. Y.	1	
New York State Library	9	
New York State Museum	3	8
Pennsylvania State College	1	

	BOOKS	PAMPH- LETS.
Prudential Insurance Company of America, Newark	1	
Salem Public Library	2	1
Smoot, Reed .....	.....	12*
Tuttle, Rt. Rev. Daniel S.	17	
United States, Department of Agriculture	4	308
Education Bureau .....	.....	18
Library of Congress	7	9
Superintendent of Documents ...	338	23
Utah Farmers' Institute .....	.....	6
Secretary of State	3	
Superintendent of Public Documents, Salt Lake City	1	
Utica Public Library	1	
Universal Exposition of 1904, Publicity Bureau St. Louis .....	.....	2
Wisconsin Insurance Commission, Madison ...	1	
Wisconsin State Historical Society Library, Madison	341	223

*Maps.

SCHOOL OF COMMERCE.

A number of beautiful framed pictures from each of the following transportation lines and financial institutions:

- Union Pacific Railroad.
- Frisco System
- Maine Central Railroad.
- Grand Trunk Railroad.
- Wabash Railroad.
- Southern Pacific Railroad.
- Denver and Rio Grande Western Railroad.
- Lehigh Valley Railroad.
- Missouri Pacific Railroad.

New York Central and Hudson River Railroad.
 Rock Island System.
 White Star S. S. Line.
 American S. S. Line.
 North German Lloyd S. S. Line.
 Cunard S. S. Line.
 Remington Typewriter Co.
 Oliver Typewriter Co.
 Fox Typewriter Co.
 New York Life Insurance Co.
 Mutual Life Insurance Company of New York.
 Northwestern Life Insurance Co.
 New York National Exchange Bank.
 National Bank of the Republic, New York.
 Knox Hat Factory, Brooklyn.

A collection of by-products from the Armour Packing Company, consisting of bone novelties, commercial fertilizers, glues, etc.

A complete set of books and stationery for a second class post office, and the laws, instructions for organizing, and blanks for national banks from the United States Government.

A line of office specialties and filing cabinets from John F. Diemer of New York City.

ANIMAL INDUSTRY.

ON LOAN ACCOUNT.

"U. S." Cream Separator Vermont Farm Machine Co.
 "De Laval" Cream Separator De Laval Separator Co.
 "Simplex" Separator D. H. Burrell & Co.
 "Sharples" Separator Sharples Separator Co.
 "Empire" Separator U. S. Extracting Co.

ZOOLOGY.

Leg bone of Mastodon George H. Lowe.
 Canada Goose Preston Thatcher.
 Mallard Duck S. G. Rich.
 Specimens of Army Cricket Walter James.

Alumni Association.

The Alumni Association was organized in June, 1899. All those who hold degrees in any of the courses of the College are eligible to membership. In the first two classes, three students were graduated with the degree of Bachelor of Civil Engineering (B. C. E.). Since 1895, five prescribed courses have been offered, but the degree in each has been Bachelor of Science (B. S.), the particular course being specified in the diploma.

OFFICERS FOR 1903-1904.

William Peterson, '99, President.
Mattie Stover, '01, First Vice President.
Grace Fisher, '03, Second Vice President.
Lydia Holmgren, '03, Secretary.
Mrs. Anna Beers Petty, '98, Treasurer.

Eleventh Annual Commencement.

GRADUATES.

WITH DEGREES.

Bachelor of Science in Agriculture.—William Jardine, Jr., Cherry Creek, Ida.

Bachelor of Science in Domestic Science.—Jane Geneva Egbert, Logan, Utah. Grace Fisher, Orleans, Indiana.

Bachelor of Science in Commerce.—Charles Arthur McCausland, Logan, Utah. David Morgan Stephens, Malad, Idaho.

Bachelor of Science in Civil Engineering.—Samuel Perry Morgan, Franklin, Idaho. Warren Gibbs Swendsen, Richmond, Utah. Ray Benedict West, Ogden, Utah.

Bachelor of Science in Mechanical Engineering.—Edmund Crawford, Manti, Utah.

Bachelor of Science in General Science.—Ray Homer Fisher, Oxford, Idaho. Joseph Eames Greaves, Preston, Idaho. Roy Fisher Homer, Oxford, Idaho. Elmer George Peterson, Baker City, Oregon. Frank Lorenzo West, Ogden, Utah.

WITH CERTIFICATES.

Domestic Science.—Priscilla King, Logan, Utah. Inez Powell, Logan, Utah.

Commerce.—Orval Webster Adams, Logan, Utah. Francis David Farrell, Smithfield, Utah. Grace DeForest Gilpin, Logan, Utah. George Leonard Parkinson, Franklin, Idaho. Abraham Smith, Poplar, Idaho.

Manual Training in Domestic Arts.—Rachel Elise Campbell, Salt Lake City, Utah. Lillian Elnora Gardner, Logan, Utah. Rebecca Viola Hale, Logan, Utah. Millie Lowe, Franklin, Idaho. Alva Retta Merrill, Richmond, Utah. Gertrude Marie Vibrans, Cokeville, Wyoming.

Manual Training in Mechanic Arts.—Fred Arthur Dahle, Logan, Utah. Howard Peter Madsen, Manti, Utah.

CATALOGUE OF STUDENTS.

GRADUATES.

Maughan, May Logan.
 Stewart, Robert Logan.

SENIORS.

Crawford, Edmund Manti.
 Egbert, Geneva Logan.
 Fisher, Grace Orleans, Indiana.
 Fisher, Ray Homer Oxford, Ida.
 Greaves, Joseph Eames Preston, Ida.
 Homer, Roy Fisher Logan.
 Jardine, William Cherry Creek, Ida.
 McCausland, Charles Arthur Logan.
 Morgan, Samuel Perry Franklin, Ida.
 Peterson, Elmer George Baker City, Oregon.
 Stephens, David Malad, Ida.
 Swendsen, Warren Gibbs Richmond.
 West, Franklin Lorenzo Ogden.
 West, Ray Benedict Ogden.

JUNIORS.

Adams, Hugh Robert Logan.
 Adams, Orval Webster Logan.
 Ballantyne, Richard Stewart Logan.
 Bowman, Verna Pearl Ogden.
 Caine, Blanche Elise Logan.
 Coburn, John Leatham Wellsville.
 Darley, Charles Thirkell Wellsville.
 Forgeon, Mildred Cokeville, Wyoming.
 Frederickson, John Julius Malad, Ida.
 Gardner, Tillie Celestia Pine Valley.

Hendricks, LaFayette	Richmond.
Humphreys, LeGrande	Paris, Ida.
Jardine, James Tertius	Cherry Creek, Ida.
Jenkins, John Lewis	Malad, Ida.
Kerr, William Horace	Logan.
Love, Hazel	Salt Lake City.
Maughan, Ella	Logan.
Merrill, Melvin Clarence	Richmond.
Nelson, Frank Orlando	Richmond.
Peirce, Eugenio Snow	Brigham.
Porter, Charles Walter	Porterville.
Rich, Samuel Grover	Blackfoot, Ida.
Smith, James Henry	Boise, Ida.
Taylor, Joseph Edward	Salt Lake City.
Tuttle, John Henry	Manti.

*SOPHOMORES.

Allred, Irvin	Logan.
Peterson, Minnie	Logan.
Rudolph, Mary Edith	Taneytown, Maryland.

FRESHMEN.

Acuff, Elmer Bruce	Blackfoot, Ida.
Annett, Leslie Robert	Boise Ida.
Armstrong, James Arthur	Ephraim.
Barrack, James Edward	Salmon, Ida.
Bird, Charles Grant	Mendon.
Crawford, Edwin Merriam	Manti.
Eliason, Benjamin Franklin	Mroni.
Fenn, Ray Randolph	Provo.
Gardner, Willard	Pine Valley.
Gleed, Henry, Jr.	Lima, Montana.
Howell, Luther Maughan	Logan.
Irwin, Cecil Alexander	Salt Lake City.

*In March, 1901, one year's work was added to the requirements of the regular baccalaureate courses. On this account, those who would otherwise rank as sophomores are classed as freshmen.

Johnston, Thomas	Vernal.
Kearns, James Leonard	Park City.
Kirk, Elmer Tilghman	Wilmington, Ohio.
Lee, Stewart	Iona, Ida.
Mathews, Fred	Eureka.
McCarty, Edgar Cook	Monroe.
Moench, Frank Moses	Ogden.
Nebeker, Laura	Logan.
Perry, Seth Eugene	Logan.
Peterson, Preston Geddes	Baker City, Oregon.
Pond, Casper Whittle	Thatcher, Ida.
Powell, Jonathan Sockwell	Logan.
Proctor, Auer Winchester	Mt. Pleasant.
Riter, Benjamin Franklin	Logan.
Sampson, Irving	Silver City, Ida.
Walter, George Ossian	Logan.

SPECIALS.

Ball, Mildred N.	Logan.
Edwards, Annie Rachel	Logan.
Izatt, Kate	Logan.
Jensen, William Arthur	Logan.
Maughan, Peter Weston	Logan.
Merrill, Effie E.	Logan.
Rudolph, Roy	Taneytown, Maryland.
Sly, Alford D.	Plymouth, Michigan.
Snow, Cora G.	Logan.
Swendsen, Media	Richmond.
Thatcher, Frank Davis	Logan.

AGRICULTURE.

Second Year.

Beard, Charles Edward	Milford.
Christensen, Moses	Newton.
Doremus, Henry Richards	Salt Lake City.

Fleming, Charles Elliott	Logan.
Oldham, Edward Price	Paradise.
Oldham, William Brown	Paradise.
Peery, Frank Simon	Ogden.
Pendleton, Mark Anthony	Salina.
Smith, William Richard	Logan.
Stephens, John	Malad, Ida.
Turpin, George Melvin	Murray.
Woodbury, William Henry	Salt Lake City.

First Year.

Anderson, Josephh Morgan	Peterson.
Barton, George Franklin	Ferron.
Caine, Lawrence Ballif	Logan.
Christensen, David Wilford	Newton.
Cohn, Jerome Guy	Oneida, Ida.
Connelly, Mathias Joseph	Park City.
Daybell, Fred	Charleston.
Decker, James Bean	Bluff.
Frew, Hugh	Idaho Falls, Ida.
Gardner, Edwin LeRoy	Afton, Wyoming.
Gray, Andrew	Randolph.
Gunnell, Charles	Soda Springs, Ida.
Hadley, James	Swan Lake.
Hall, LeRoy Williamson	Wellsville.
Harmon, Henry James	Parker, Ida.
Hermanson, Christian	Elsinore.
Irons, Joseph Golden	Nephi.
Lee, William Henry	Iona, Ida.
Lofthouse, Parley Woodhead	Paradise.
Lowry, Harold	Manti.
Nelson, Swen Ezekiel	Newton.
Nielsen, Joseph Andrew	Hyrum.
Parker, Ernest Mitchell	American Fork.
Pearson, Harry	Moore, Ida.

Petersen, Arthur Elvirus	Samaria, Ida.
Petersen, Willard	Hyrum.
Reader, Ray Haller	Vernal.
Rich, Standley Hunter	Montpelier, Ida.
Roberts, Robert	Layton.
Smith, George A.	Poplar, Ida.
Stewart, William Heleman	Logan.
Wheeler, Jerome	Slaterville.
White, Milton	Vernal.
White, Newel Knight	Payson.
Whitesides, Mark Pratt	Layton.

Winter Course.

Boswell, Stephen	Nephi.
Colby, LeGrande Collins	Mendon.
Dibble, Rudolph	Layton.
Ford, John Heber	Venice.
Gardner, Albert	American Fork.
Hodges, William Nehemiah	Logan.
Kingston, Charles William	Evanston, Wyoming.
Larsen, George	Ephraim.
Layton, Delbert Phillips	Layton.
Logie, Maurice	American Fork.
MacMullin, John	Idaho Falls, Ida.
Nelson, Francis Eugene	Greenville.
Norr, Edmund Olef	Logan.
Reeve, William E.	Hinckley.
Schmutz, John Henry	St. George.
Turner, Alfred	Logan.
Walton, William Wallace	Logan.

DOMESTIC SCIENCE.

Third Year.

Jorgensen, Orilla	Hyde Park.
King, Priscilla	Logan.

Powell, Inez	Logan.
Roberts, Vida Margaret	Layton.

Second Year.

Blechert, Johanna	Geneva.
Christensen, Esther Sophia	Newton.
Cooper, Pearl	McCammon, Ida.
Crookston, Jean	Greenville.
Farr, Eva	Ogden.
Green, Margaret Davinie	Layton.
Hayball, Nellie	Logan.
Homer, Mell	Logan.
Jacobson, Eunice Estella	Logan.
Kerr, Bertha	Logan.
Kerr, Coral	Logan.
Kloepfer, Emma Eliza	Logan.
Lowe, Bertha	Franklin, Ida.
Mathews, Hannah	King.
Maughan, Edna Harriet	Logan.
Morrell, Mary Selina	Logan.
Nebeker, Luella	Laketown.
Nebeker, Mable	Laketown.
Quayle, Dora	Dingle, Ida.
Thomas, Louie	Logan.

First Year.

Adams, Catherine Maria	Layton.
Bankhead, Elizabeth Glenn	La Grande, Ore.
Burns, Retta	Logan.
Burns, Ethelyn	Logan.
Campbell, Florence Ruby	Rosette.
Drake, Mary Lucine	Corinne.

Griffiths, Margaret	King.
Groesbeck, Josephine	Logan.
Haney, Hattie Louise	Moore, Ida.
Hughes, Anna	Willard.
Kerr, Vesta	Logan
Mathisen, Emma	Ovid, Ida.
McAlister, Carrie	Logan.
Nebeker, Ruby Leith	Logan.
Ormsby, Radie	Rexburg, Ida.
Quayle, Jeanette	Dingle, Ida.
Thomas, Gwen	Logan.

Winter Course.

Amundson, Mrs. Flora	Brigham.
Blechert, Antonia	Geneva, Ida.
Coy, Daisy Louise	Plain City.
Eccles, Vida	Ogden.
Houtz, Virginia	Ogden.
Johnson, Silvey	Logan.
Page, Cora	Payson.
Parkinson, Theresa	Franklin, Ida.
Sidwell, Mrs. Clara G.	Brigham.

COMMERCE.

Third Year.

Darley, William Owen	Wellsville.
Gilpin, Grace	Logan.
Parkinson, Leonard George	Franklin, Ida.
Smith, Abraham	Poplar, Ida.

Second Year.

Boyle, Marie Ellen	Lost River, Ida.
Deschamps, Nellie	Malad, Ida.
Edwards, Edward Cephas	Logan.

Erickson, Joseph Albert	Richmond.
Frew, Wallace	Idaho Falls, Ida.
Gee, William E.	Ova, Ida.
Gentry, Ralph	Coalville.
Hansen, Alva	American Fork.
Hillman, Robert	Oxford, Ida.
Holmes, John Hobson	Oakley, Wyoming.
Jensen, Fred Russell	Manti.
Jensen, Hans Ephraim	Ephraim.
Jones, Archie Taylor	Smithfield.
Morgan, Wayne	Collinston.
Olson, Aaron Brigham	Logan
Olson, David Lorenzo	Hooper
Payne, Robert Arthur	Blooming, Ida.
Pugmire, Jonathan Rich	St. Charles, Ida.
Rich, Joseph C.	St. Charles, Ida.
Shaw David Myrtila	Ogden.
Smart, Iva	Franklin, Ida.
Sorensen, Charles J.	Hyrum.
Tarbet, David	Logan.
Trude, Samuel Alfred.	Rea, Ida.
Wallace, Cadmus	Whitney, Ida.

First Year.

Anderson, Oscar William	Grantsville.
Benson, Ezra Taft	Logan.
Blackburn, Eugenia	Loa.
Bramwell, Adna Elias	Plain City.
Britzelli, Oscar Emanuel	Logan.
Bush, Perry	American Fork.
Chipman, Alva	Salt Lake City.
Chipman, Bert	American Fork.
Cox, Edward Eugene	Manti.
Cronholm, Thure	Randolph.
Davies, John	Evanston, Wyoming.

Drescoll, Edwin	Pocatello, Ida.
Durfee, Edmund Jones	Lewiston.
Frank, Justus	Logan.
Gibbs, Grover Frank	Deseret
Hansen, George August	Logan.
Harris, Melvin Charles	Richmond
Hatch, Sumner	Logan.
Hoalst, Julia	Darlington, Ida.
Hughes, Robert	Samaria, Ida.
Hyde, Alma	Nephi.
Hyde, Rose	Logan.
Jackson, Victor Orn	Randolph.
Jacobsen, Wilford Alexander	Pleasant Grove.
Johnson, Heber Francis	Richmond.
Jones, Charles Albert	Smithfield.
Jorgensen, Leeman Artgar	Hyde Park.
Kesler, Hoy Weir	Wellsville.
King, James L.	Lost River, Ida.
Lewis, Virginia	Oxford, Ida.
Lind, Herman G.	Lynn.
Madsen, Clarence	Manti.
Mathisen, Sophia	Ovid, Ida.
McKnight, William	Ely, Nevada.
Munk, Oliver	Logan.
Nebeker, Alfred	Randolph.
Olson, James Alfred	Ovid, Ida.
Olson, John Emil	Logan.
Olsen, Ray Gustaf	Logan.
Pearson, Roy Curtis	Moore, Ida.
Petersen, Manie	Ogden.
Petersen, Willard Larsen	Mendon.
Phillips, William	Salina.
Ruud, Birt	Soda Springs, Ida.
Siggard, Lewis	Brigham.
Skeen, Alfred David	Plain City.
Tarbet, Raymond	Logan.

Thomas, Pratt Pace	Spanish Fork.
Thompson, Alvin	Logan.
Tyzack, Maurice	Vernal.
Udall Alvin	Nephi.
Wiggill, Joseph Lewis	Layton.
Yates, Josephine	Logan.

Winter Course.

Bennett, William Ellison	Layton.
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DOMESTIC ARTS.

Third Year.

Campbell, Rachel Elise	Salt Lake City.
Gardner, Lillian Elnora	Logan.
Hale, Rebecca Viola	Logan.
Hoffman, Lena Martha	Logan.
Lowe, Millie	Franklin, Ida.
Merrill, Alva Retta	Richmond.
Thatcher, Genevieve	Logan.
Thatcher Vida	Logan.
Vibrans, Gertrude Marie	Cokeville, Wyoming.
Wilson, Dorothy	Randolph.

Second Year.

Adams, Marion Ferdinand	Logan.
Allen, Millie	Weston, Ida.
Bacon, Clara Olive	West Jordan.
Badger, Rose	Salt Lake City.
Barson, Mattie	Clarkston.
Bybee, Melissa	Lewiston.
Campbell, Mary Janet	Logan.
Cowley, Ella	Logan.

Crookston, Allie	Greenville.
Crowther, Mary Rosanna	Logan.
Douglas, Nettie	Smithfield.
Edlefsen, Mary	Logan.
Eliason, Elva Abby	Logan.
Evans, Rosa	Randolph.
Faylor, Louvernia Eurilla	Bloomington, Ida.
Gleed, Emma Caroline	Lima, Montana.
Hansen, Ida Marie	Logan.
Hansen, May	Logan.
Henniger, Maud	Magrath, Canada.
Johnson, Frances	Hyrum.
Jones, Lydia Geneve	Provo.
Jorgensen, Alvaretta	Hyde Park
Laird, Lillie	Eureka.
Norr, Luella Jane	Logan.
Page, Mary Leaver	Marysvale.
Petersen, Agnes	Hyrum.
Smith, Effie Eliza	Logan.
Stewart, Ella	Plain City.
Stoddard, Eva	Logan.
Stratford, Ina Rosetta	Logan.
Swendsen, Anna	Richmond.
Thatcher, Martha	Logan.
Thomas, Rhoda May	Spanish Fork.
Wattis, Mattie Casidy	Ogden.
Welker, Rose	Bloomington, Ida.
West, Mary Josephine	Ogden.
Wilson, Della	South Taylorsville.
Young, Nellie Catherine	Park City.

First Year.

Bankhead, Nancy Haslam	Wellsville.
Beard, Mary Ann	Milford.
Brown, Pauline Adell	Loa.
Burgess, Isabell	Idaho Falls, Ida.

Bybee, Sarah	Lewiston..
Cook, Ethel	Dingle, Ida..
Gleed, Pearl Leona	Lima, Montana..
Hoagland, Ella	Elba, Ida..
Johnston, Mary	Garden City
King, Josie... ..	Lost River, Ida..
Long, Mary Estella	Bloomington, Ida..
McKinnon, Sara	Randolph.
Niederhausern, Rosa V.	Logan.
Nelson, Anna Wilhelmina	St. Charles, Ida.
Petersen, Margaret	Hyrum.
Pugmire, Lois Luanna	St. Charles, Ida.
Wilson, Jennet	Randolph.
Wright, Clara	Franklin, Ida.

MECHANIC ARTS.

Fourth Year.

Dahle, Fred Arthur	Logan.
Madsen, Howard Peter	Manti.

Third Year.

Christiansen, Christian	Randolph.
Finlayson, George Clifford	Logan.
Hawley, Frank	Inverury.
McClellan, Orla Elmer	Payson.
Newey, Aaron	Logan.
Ohlson, Albert A.	Hooper.
Scott, George Washington	Salt Lake City.
Shaw, Austin Herman	Ogden.
Wangsgard, Frederick Christian	Huntsville.

Second Year.

Allen, David Adams	Teasdale.
Allen, William Berry	Teasdale.
Anderson, Eric H.	Lehi.

Anderson, Jacob Henry	Lehi.
Anderson, Lester	Huntsville.
Bateman, Joseph Deseret	Sandy.
Booth, Louis Hyrum	St. Charles, Ida.
Campbell, Raleigh	Naf, Ida.
Carver, Heber	Ogden.
Chugg, Willard Hyrum	Providence.
Cox, Frederick	Manti.
Cronholm, Lars Frederick	Logan.
Finlayson, Reginald Patric	West Jordan.
Goff, Jedediah H.	Sandy.
Hansen, Christian	Iona, Ida.
Hendry, John Jones	Wellsville.
Hoagland, Robert Roy	Elba, Ida.
Hodson, Wager	Vernal.
Lofgreen, Samuel	Huntsville.
Marguardson, Hyrum	Elsinore.
Monson, Henry	St. Charles, Ida.
Parker, James Cooper	Wellsville.
Passey, Edward John	Paris, Ida.
Paulson, Lawrence	Morgan.
Roberts, Herbert Leason	Hennefer.
Rowland, Thomas Graves	Logan.
Taylor, John	Logan.
Taylor, Thomas Gabriel	Far West.
Taylor, Ulysses Carl	Willard.
Wade, James Holt	Payson.

First Year.

Aikele, Andrew, Jr.	Providence.
Ahlin, Joseph Edward	Santaquin.
Amundson, Adrian Elmer	LeGrande, Oregon.
Anderson, Brigham Jefferson	Lehi.
Archibald, James Henry	Wellsville.

Argyle, Daniel Lorenzo	Salina.
Bair, Parley	Millville.
Baker, Simon Moroni	Mendon.
Beck, John Milton	Spanish Fork.
Bjerregaard, Walter	Ephraim.
Bringhurst, John Tripp	Taylorville.
Britzelli, Joseph	Logan.
Brown, Herbert	Wilson.
Bybee, Albert	Lewiston.
Carr, John	Rock Springs, Wyoming.
Carter, Brigham	Vernal.
Clayburn, Reese	Midway.
Crane, George Alfred	Salina.
Crawford, William W.	Sunnyside.
Crookston, Lee Nichols	Logan.
Davis, John Morgan	Malad, Ida.
Dobbs, Lester Reese	Bingham.
Fox, Earl William	Hailey, Ida.
Frodsham, Lee Ezra	Rockland, Ida.
Griffiths, Thomas	Benson.
Harmston, Craig	Vernal.
Harris, Guy Fred	Deweyville.
Hatch, Anson	Chesterfield, Ida.
Hocking, Bert Arthur	Bingham.
Hudman, Ellis	Slaterville.
Johnson, David Ervin	Garden City.
Johnson, Parley William	Logan.
Kahler, Frederick	Midway.
Kalemkarian, Hagob Raphael	Provo.
Karlson, Lawrence	Parker, Ida.
Lish, William Leslie	McCammon, Ida.
Lloyd, Parley	Logan.
Longhurst, Lewis	Randolph.
McBride, Warren Grover	Tooele.
McClellan, Albert Leslie	Lea.
McNeil, James Francis	Logan.

Muir, Milton Barlow	Randolph.
Nielsen Andrew	Randolph.
Nelson, Nels John	St. Charles, Ida.
Olson, Charles Henry	Crescent
Osterloh, Carl Herman	Lehi.
Patterson, Ray	Hooper.
Petersen, James Alma	Logan.
Petersen, Mons, Jr.	Moab.
Phelps, Oscar	Mesa, Arizona.
Purdum, Hartley	Hailey, Ida.
Rice, Clem	Parker, Ida.
Rice, David Augustus	Parker, Ida.
Sandberg, Brigham James	Richfield.
Sandgreen, George Edward	Pleasant Grove.
Scott, David Moroni	Millville.
Scott, Harold Sylvester	Millville.
Sidwell, George Winslow	Manti.
Snell, Cyrus Phillips	Spanish Fork.
Stewart, Joseph	Logan.
Stringham, David	Thurber.
Taylor, Albert Richard	Fairview, Ida.
Thoresen, Aurelius Ray	Logan.
Turner, Franklin David	Logan.
Vaughan, William Orlond	Butte, Montana.
Weber, Albert	Logan.
Wiggill, Albert	Layton.

Winter Course.

Archibald, Thomas Woodward	Wellsville.
Calhoun, William Albert	Bellevue, Ida.
Clawson, Leo	Providence.
Cooper, William Wyley	Dempsey, Ida.
Crookston, Oscar	Greenville.
Furhiman, George Washington	Providence.

Johnson, Hyrum Edward	Linden.
Kesler, Edward James	Central, Ida.
Kloepfer, Frederick Joseph	Logan.
Kuphaldt, Hareld Edward	Bingham.
Larsen, John Martin	Ogden.
Larsen, Peter	Greenville.
Mattson, George Bert	Poplar, Ida.
Millecam, Daniel	Hyde Park.
McKnight, Albert Horl	Ely, Nevada.
Olson, Edwin	Lewiston.
Petersen, Nephi	Logan.
Purdum, Henry Thomas	Hailey, Ida.
Smith, Harl Burnham	Logan.
Smith, Isaac Fowles	Millville.
Springer, Jerry Roman	Midway.
Swanson, Arthur	Lost River, Ida.
Watkins, Nymphus J.	Midway.
Wilson, Charles Edward	Wilson.
Wrobetz, Charles James	Kewanee, Wisconsin.

COLLEGE PREPARATORY.

Second Year.

Austin, Torrey Lynn	Liberty, Ida.
Beck, Wilford William	Newton.
Campbell, Donald Stewart	Salt Lake City.
Chambers, Edward	Smithfield
Christensen, Lawrence Adolphus	Newton.
Cooley, Abram	Mendon.
Downey, Michael	Eureka.
Finlayson, Vernon Alexander	Logan.
Fonnesbeck, Leon	Logan.
Freece, Daniel Vickmann	Salina.
Gardner, Wilford Woodruff	Afton, Wyo.
Hoffman, Edward	Logan.
Homer, Russell King	Logan.

Horton, John Raymond	Ogden.
Hunter, Joseph Greenwood	American Fork.
Jacobs, Clarence Cecil	Pleasant Grove.
Jacobs, Elmer Acred	Pleasant Grove.
Krumperman, Bert	Ogden.
Lowe, George Henry	Willard.
Orr, Richard	Clover.
Palmer, Alfred Merle	Logan.
Petersen, Oscar Arthur	Crescent.
Petersen, Orson Hyrum	Newton.
Sill, Jesse	Layton.
Stoops, Herbert Morton	Logan.

First Year.

Ball, Lizzie May	Wasatch.
Burton, William James	Custer, Ida.
Bybee, Maria	Lewiston.
Carl, John Roger	Chicago, Ill.
Cowley, Wallace William	Layton.
Evans, David Race	Malad, Ida.
Fisher, Victor Russell	Oxford, Ida.
Gabrielsen, Hans Martin	Logan.
Germer, Martin	Bay Horse, Ida.
Hansen, Orson Wilford	Logan.
Hansen, Robert	Levan.
Hoalst, Alice Lois	Darlington, Ida.
Hoff, Ernest Prior	Georgetown, Ida.
Jacobson, Julius William	Logan.
Jensen, Hyrum Edward	Newton.
Jones, Isaac Lewis	Logan.
Mathias, Jared LeRoy	Rigby, Ida.
McLeod, William F.	Mammoth.
Morgan, Catherine	Cokeville, Wyoming.
Phillips, James Wilford	Porterville.
Preston, William Booker	Logan.

Ream, William Wesley	Dingle, Ida.
Robins, Emmett	Salina.
Smith, Frances	Logan.
Stanton, William Eldredge	Hailey, Ida.
Straight, Grace Anna	Dubois, Ida.
Swenson, Dan Arthur	Pleasant Grove.
Taylor, Robert	Fairview, Ida.
Thomas, Guy L.	Logan.
Walters, Edward Haslam.....	Logan.
Wendleboe, Leo	Logan.
West, Charles Henry	Ogden.
Woodhouse, Elliott	Logan.
Yeaman, Nathan Thomas	Irwin, Ida.

OPTIONAL.

Egbert, Maude	Logan.
Hansen, Simeon	Brigham.
Kerr, Leona	Logan.
Kovallis, Hermann	Logan.
Kummer, Martha	Logan.
Nibley, Annie	Logan.

SUB-PREPARATORY.

Amussen, Victor	Logan.
Andersen, Andrew	Richmond.
Andrews, Junius James	Logan.
Badger, James William	Kelton.
Batt, William	Logan.
Burgie, Lillian	Logan.
Campbell, Roy Francis	Beaver.
Cluff, Eugene	Provo.
Cooley, Oscar	Mendon.
Crockett, Elean	Logan.
Fenner, Paul Overtris	Butte, Montana.

Forgeon, Ralph	Logan.
Glenn, Walter John	LeGrande, Oregon.
Hanson, Erlese Peter	Providence.
Harrison, William	Sunnyside.
Hendry, Jennie Glenn	Wellsville.
Hughes, Olive	American Falls, Ida.
Hunter, Amy	Parker, Ida.
Jamison, William Flove	Lewiston.
Jenkins, LeRoy	Parker, Ida.
Johnson, Jennie Christina	Logan.
Jones, Lila	Logan.
Lillywhite, James Ezra	Brigham.
Lund, Charles Walter	Ephraim
Lundberg, Julia	Logan.
Marley, Alma	McCammon, Ida.
Moser, John Henry	Logan.
Newburger, John Joseph	Logan.
Olsen, Wilford Woodruff	Logan.
Pheney, John Elmer	Cache Junction.
Pyle, Guy Evert	Opal, Wyoming.
Reeves, John	Evanston, Wyoming.
Richardson, Frank Hazen	Park City.
Risken, Harry Warren	Anaconda, Montana.
Rust, Bertha	Logan.
Schiffman, William Vernon	Logan.
Smith, Guy Morvan	Lewiston.
Stringfellow, Junius	Salt Lake City.
Tuscan, John	Lewiston, Montana.
Watts, Hyrum Franklin	Rexburg, Ida.
Wells, Lawrence Ray	Woodruff, Ida.
White, Birdie	Vernal.
Wilson, Ivan Henry	Payson.
Wilson, Thomas Floyd	Payson
Wolfe, Irvin	Bingham
Wright, Wallace	Franklin, Ida.
Wrigley, Robert Lecoren	American Fork.

Winter Course.

Campbell, Edward Robert	Logan.
Stayner, Roy	Fielding.
Wells, John Sawyer	Woodruff, Ida.

SUMMER SCHOOL.

Barber, Myrtie May	Marysvale.
Bateman, Julia	West Jordan.
Beck, Annie	Newton.
Boberg, Mary	Draper.
Bowman, Verna Pearl	Ogden.
Campbell, Orson Dewsnap	Provo.
Card, Alma	Promontory.
Christensen, Jennie	Hyrum.
Clark, Edward John	Benson.
Egbert, Nora	Logan.
Egbert, Stella	Logan.
Flint, Letitia	Layton.
Forgeon, Mildred	Cokeville, Wyoming.
Gardner, Tillie	Pine Valley.
Green, Margaret Davinie	Layton.
Griffiths, Elizabeth	Benson.
Groesbeck, Susie	Logan.
Hawkes, Nellie May	Logan.
Jenson, Eliza	Logan.
Kinyon, Metta	Deweyville.
Maughan, Ella	Logan.
Maughan, Peter Weston	Logan.
Merrill, Hattie	Richmond.
Merrill, Ida Homer	Preston, Ida.
Parker, Louise	Ogden.
Paulson, Niels Peter	Logan.
Peterson, Dora	Hyrum.
Peterson, Ida H.	Smithfield.

Roberts, Vida Margaret	Layton.
Robertson, Ruby	Ewing, Indiana.
Schweizer, Amelia	Logan.
Simonds, Jean	Richfield.
Stevens, Annie Dorothy	Mt. Pleasant.
Stewart, Robert	Plain City.
Taylor, Sara	Logan.
West, Frank Lorenzo	Ogden.

SUMMARY OF STUDENTS.

Graduates	2
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Juniors	25
Sophomores	3
Freshmen	28
Specials	13
Fourth Year (with rank of Freshmen).....	2
Third Year (with rank of Freshmen)	27
	— 114
Second Year	150
First Year	224
Optionals	6
Sub-Preparatory	47
Winter Course	55
	— 482
Summer School	36
	— 632
Number of names repeated	9
	—
Total registration	623

SCHEDULE.

SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
Accounting and Administration 1		2	Daily	10:20			
Accounting and Administration 2		4	"	{ 2:00			
Accounting and Administration 3		4	"	to 3:40			
Agronomy 1.....	1	4	Daily	8:40			1st term
Agronomy 1.....	2	4	Daily	8:40			2d term
Agronomy 2.....		3	T. W. S.	8:40			1st term
Agronomy 3.....		3	T. S.	8:40	W.	{ 2:00 3:40	2d term
Agronomy 4.....		1	W.	12:20			
Agronomy 5.....		3	T. Th. S.	12:20			1st term
Agronomy 6.....		3	W. F. S.	2:50			1st term
Animal Industry 1 & 7.....	1	4	Daily.	9:00			2d term
Animal Industry 1 & 7.....	2	4	Daily	9:00			1st term
Animal Industry 2.		3	T. Th. S.	12:20			
Animal Industry 3.		2	W. F.	9:30			1st term
Animal Industry 4.		3	W. F. S.	9:30			2d term
Animal Industry 5.		3	{ W. F. Th.	{ 10:20 9:30			1st term
Bacteriology.		3	W.	8:40	{ Th. F.	{ 2:00 3:40 2:00 4:30	2d term
Banking & Finance		5	{ T. Th. S. W. F.	{ 9:30 10:20			
Botany 1.....		3	W. F. S.	12:20			2d term
Botany 2.....		3	Th.	9:30	S.	{ 9:30 11:10	1st term
Business Customs..		3	T. Th. S.	10:20			
Carpentry 1.....		5			Daily	{ 8:40 11:10	
Carpentry 2.....		5			Daily	{ 2:00 4:30	

SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
Carpentry 3.....		5			Daily	{ 2:00 4:30	
Carpentry 4.....		5			T. Th. F. S.	{ 2:00 4:30	
Carpentry 5.....		2			T. Th. S.	{ 11:30 1:10	1st term
Chapel.....			Daily	11:10			
Chemistry 1.....		5	T. Th. S.	10:20	T. Th. S.	{ 2:00 3:40	
Chemistry 2.....		4	T. Th. S.	8:40	T.	{ 2:00 4:30	
Chemistry 3.....		3	{ W. F. Th.	{ 9:30 2:00			
Chemistry 4.....		3			{ W. S. Th.	{ 2:00 4:30 2:00 3:40	
Chemistry 5, 6, 7, 11, 12, 14.....					{ T. Th. S. T. S. Th.	{ 11:30 1:10 2:00 4:30 2:00 3:40	
Chemistry 8, 9 or 10.....		3	T. Th. S.	9:30			
Drawing 1.....	1	2	Daily	8:40			
Drawing 1.....	2	2	Daily	10:20			
Drawing 1.....	3	2	W. F.	{ 2:00 3:40			
Drawing 1.....	4	2	Daily	2:50			
Drawing 2.....		2	Daily	9:30			
Drawing 3.....		2	Daily	12:20			
Drawing 5.....		2	T. F. S.	{ 8:40 10:20			
Drawing 6.....		3	{ W. F. S. T. Th. W.	{ 8:40 9:30 8:40 10:20 10:20			
Engineering 1a....		2			{ T. W. Th. S.	{ 8:40 8:40 10:20	
Engineering 1b....		2			T. W. F.	{ 8:40 10:20	

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SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year,
			Days.	Hour.	Days.	Hour.	
Engineering 2a....	3		T. W. F.	11:30	.....	.....	2d term
Engineering 2b....	2		W. F.	9:30	.....	.....	1st term
Engineering 2b....	3		W. F.	9:30	F.	{ 2:00 3:40	2d term
Engineering 3a....	3		T. S.	2:00	{ T. Th.	{ 2:50 4:30 2:00 3:40	1st term
Engineering 3b....	3		T. Th.	2:00	{ T. S.	{ 2:50 4:30 2:00 3:40	2d term
Engineering 4a....	4		T. W. F. S.	12:20	Th.	{ 2:00 3:40	2d term
Engineering 4b....	5		T. Th. F. S.	8:40	W.	{ 2:00 3:40	.....
Engineering 5a....	3		T. Th. S.	10:20	.....	.....	.....
Engineering 5b....	3		T. Th. S.	9:30	.....	.....	1st term
Engineering 5d....	3		T. W. Th. F.	9:30	.....	.....	2d term
Engineering 5e....	2		.....	.....	T. F.	{ 2:00 3:40	.....
Engineering 6a....	3		.....	.....	Daily	{ 2:00 3:40	2d term
Engineering 6b....	2		.....	.....	T. W. F.	{ 2:00 3:40	.....
Engineering 7a....	3		T. Th. S.	9:30	.....	.....	.....
Engineering 8a....	3		T. Th. S.	10:20	.....	.....	1st term
Engineering 8b....	2		W. F.	10:20	.....	.....	2d term
Engineering 9....	3		T. Th. S.	8:40	.....	.....	2d term
Engineering 10....	3		T. Th. S.	10:20	.....	.....	1st term
Engineering 11....	4		T. W. F. S.	12:20	Th.	2:00	1st term
English 1.....	1	5	Daily	2:00	.....	.....	.....
English 1.....	2	5	Daily	8:40	.....	.....	.....
English 1.....	3	5	Daily	2:00	.....	.....	.....
English 1.....	4	5	Daily	8:40	.....	.....	.....
English 2.....	1	5	Daily	12:20	.....	.....	.....
English 2.....	2	5	Daily	2:50	.....	.....	.....
English 2.....	3	5	Daily	12:20	.....	.....	.....
English 2.....	4	5	Daily	10:20	.....	.....	.....
English 3.....	1	4	Daily	12:20	.....	.....	.....
English 3.....	2	4	Daily	9:30	.....	.....	.....
English 3.....	3	4	Daily	12:20	.....	.....	.....

SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
English 3.....	4	4	Daily	2:00	.....	.....	.....
English 3.....	5	4	Daily	8:40	.....	.....	.....
English 4.....	1	2	W. F.	9:30	.....	.....	.....
English 4.....	2	2	W. S.	8:40	.....	.....	.....
English 4.....	3	2	W. F.	10:20	.....	.....	.....
English 4.....	4	2	T. Th.	9:30	.....	.....	.....
English 4.....	5	2	T. Th.	2:50	.....	.....	.....
English 5.....	1	5	Daily	8:40	.....	.....	.....
English 5.....	2	5	Daily	9:30	.....	.....	.....
English 6.....	1	3	T. } W. F.	9:30	.....	.....	.....
English 6.....	2	3	W. F. S.	10:20	.....	.....	.....
English 7.....	3	3	T. Th. S.	12:20	.....	.....	.....
English 8 or 9.....	2	2	W. F.	2:00	.....	.....	.....
English 10.....	3	3	T. Th. S.	2:50	.....	.....	.....
English 11 or 12...	3	3	W. F. S.	.....	.....	.....	.....
Entomology 1.....	2	2	W.	8:30	F.	{ 2:00 4:30	.....
Entomology 2.....	2	2	Th.	12:20	W. F.	{ 2:00 4:30	.....
Forging 1.....	5	5	.....	.....	Daily	{ 8:40 11:10	.....
Forging 2.....	5	5	.....	.....	Daily	{ 2:00 4:30	.....
Forging 3.....	5	5	.....	.....	T. Th. F. S.	{ 2:00 4:30	.....
Forging 4b.....	2	2	.....	.....	T. Th. S.	{ 11:30 1:10	2d term
French 1.....	3	3	Daily	12:20	.....	.....	.....
Geography.....	1	3	W. F. S.	3:40	.....	.....	.....
Geography.....	2	3	T. Th. S.	2:00	.....	.....	.....
Geography.....	3	3	W. F. S.	9:30	.....	.....	.....
Geology 2.....	3	3	T. Th. S.	10:20	.....	.....	.....
Geology 3.....	2	2	Th. S.	9:30	.....	.....	.....
Geology 4.....	3	3	T. } W. F.	9:30	.....	.....	.....
German 1.....	3	3	Daily	10:20	.....	.....	.....
German 2.....	3	3	T. W. F.	8:40	.....	.....	.....
History 1.....	1	3	T. Th. S.	9:30	.....	.....	.....
History 1.....	2	3	T. Th. F.	10:20	.....	.....	.....
History 1.....	3	3	W. F. S.	8:40	.....	.....	.....
History 1.....	4	3	T. Th. S.	9:30	.....	.....	.....
History 1.....	5	3	T. Th. S.	12:20	.....	.....	.....
History 1.....	5	3	W. F. S.	2:50	.....	.....	.....

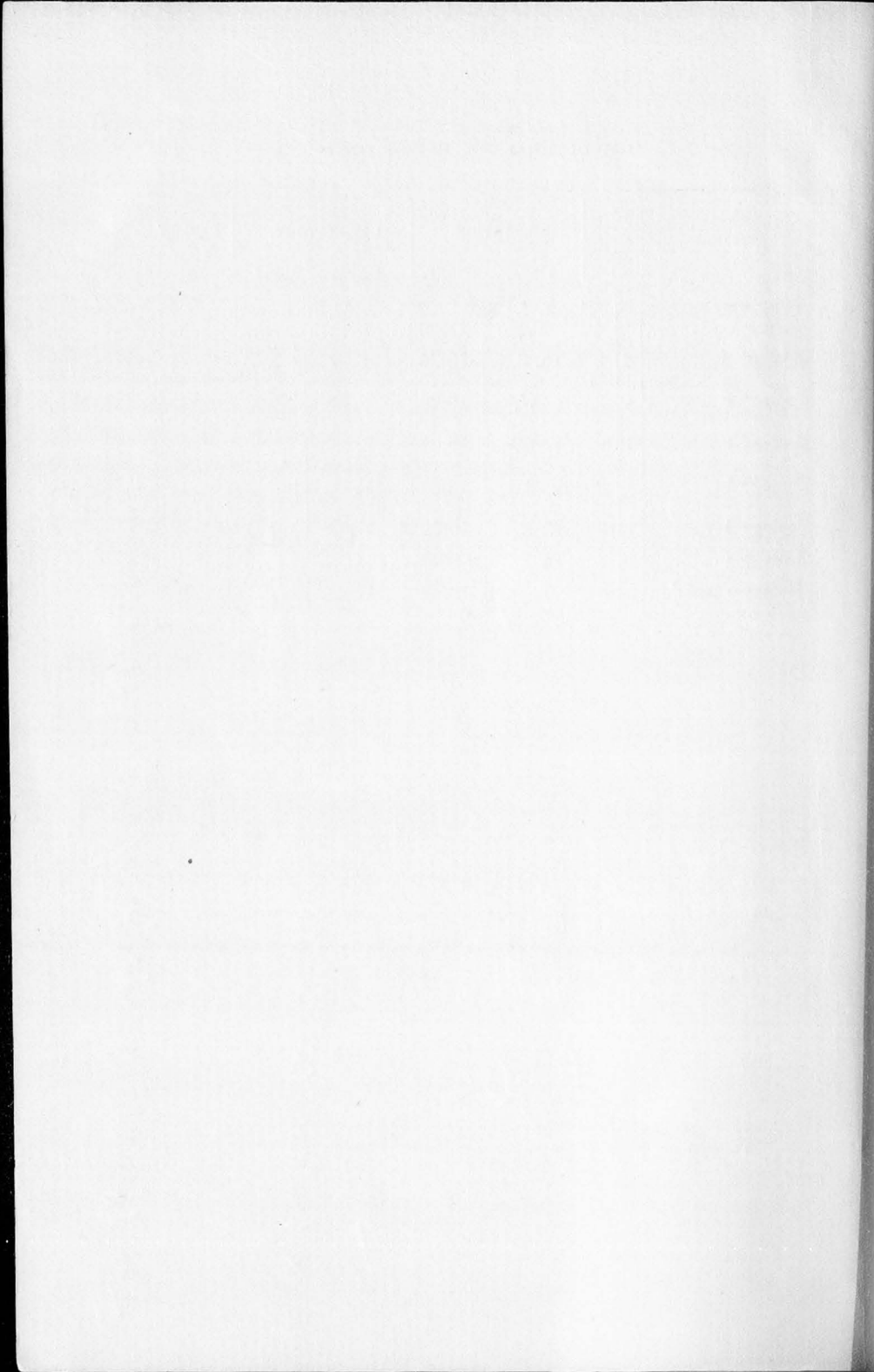
SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
History 2.....	1	3	T. Th. S.	2:00			
History 2.....	2	3	T.	11:30			
History 2.....			W. F.	12:20			
History 3.....		3	T. Th. F.	10:20			
History 5.....		3	T. Th.	2:50			
History 5.....			S.	3:40			
History 6.....		3	W. Th. S.	8:40			
History 7.....		3	W. F.	9:30			2d term
History 7.....			S.	10:20			
Horticulture 1.....		3	W. F. S.	12:20			1st term
Horticulture 2.....		3	Th. F.	8:40			1st term
Horticulture 2.....			S.	2:50			
Horticulture 3.....		2	W. S.	8:40			1st term
Horticulture 4.....		2	Th. S.	8:40			2d term
Horticulture 5.....		3	T. Th. S.	2:00			2d term
Horticulture 6 & 7.		2	W. F.	2:00			
Household Science 1.....		3			T. Th. S.	{ 2:00 3:40	1st third
Household Science 2.....		3			Daily	{ 12:20 1:10	2nd third
Household Science 3.....		3			T. Th. S.	{ 2:00 3:40	3rd third
Household Science 4a.....		2			T. Th.	{ 2:00 3:40	last two thirds
Household Science 4b.....		2			T. Th.	{ 2:00 3:40	
Household Science 5.....		2			W. F.	{ 2:00 3:40	1st third
Household Science 6.....		5	Daily	10:20			
Household Science 7.....		3	T. Th.	12:20			
Household Science 7.....			F.	11:30			
Household Science 8, 9, 11.....		5	Daily	8:40			
Household Science 10.....		2			W. F.	{ 2:00 3:40	last two thirds
Household Science 13 and 14..		5	Daily	9:30			
Household Science 15.....		2			T. F.	{ 2:00 3:40	
Latin 1.....		5	Daily	10:20			
Latin 2.....		3	W. F. S.	2:50			

SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
Latin 3.....	3	}	T. Th.	2:50			
Library			S.	3:40			
			S.	9:30			
Machine Work 1...	5				Daily	{ 8:40	
						{ 11:10	
Machine Work 2...	5				Daily	{ 2:00	
						{ 4:30	
Machine Work 3...	5				Daily	{ 2:00	
						{ 4:30	
Machine Work 4...	5				T. Th. F. S.	{ 2:00	
						{ 4:30	
Mathematics 1.....	1	5	Daily	2:50			
Mathematics 1.....	2	5	Daily	12:20			
Mathematics 1.....	3	5	Daily	9:30			
Mathematics 1.....	4	5	Daily	2:50			
Mathematics 2.....	1	5	Daily	9:30			
Mathematics 2.....	2	5	Daily	8:40			
Mathematics 2.....	3	5	Daily	2:00			
Mathematics 2.....	4	5	Daily	12:20			
Mathematics 2.....	5	5	Daily	12:20			
Mathematics 2b....							
Mathematics 3.....	1	5	Daily	9:30			
Mathematics 3.....	2	5	Daily	10:20			
Mathematics 4.....	5		Daily	12:20			
Mathematics 5.....	5		Daily	10:20			
Mathematics 6.....	3		T. Th. S.	8:40			
Mathematics 8 or 9	5		Daily	2:00			
Meteorology.....	3		T. Th. S.	12:20			2d term
Military Drill.....	1		Daily	11:30			
Mineralogy 1.....	2				W. F.	8:40	
Mineralogy 2.....	2				W. Th. F. S.	{ 8:40	
						{ 10:20	
Penmanship 1.....	1	2	Daily	3:40			
Penmanship 1.....	2	2	Daily	12:20			
Penmanship 1.....	3	2	Daily	2:00			
Penmanship 2.....	2		Daily	2:00			
Physical Culture 1	1		T. Th. S.	11:30			
Physical Culture 2	1		W. F.	11:30			
Physics 1.....	1	3	W. F.	9:30	F.	{ 2:00	
						{ 4:30	
Physics 1.....	2	3	W. F.	9:30	W.	{ 2:00	
						{ 4:30	

SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
Physics 2.....		3			Th. S.	{ 8:40 10:20	..........
Physiography.....		3	T. W. F.	3:40			.....
Paleontology.....		2	T. Th.	8:40			.....
Political Economy 1		3	{ T. F. Th.	{ 8:40 9:30			..... .....
Political Economy 2		3	T. Th. S.	12:20			.....
Political Science 1.		3	{ T. Th. S.	{ 8:40 10:20			..... .....
Political Science 2.		3	{ T. Th. S.	{ 9:30 8:40			..... .....
Political Science 4.		3	T. W. F.	10:20			.....
Product'n & Manf. 1			Daily	12:20			.....
Sewing 1a.....		2			Daily	10:20	.....
Sewing 1b and 2a..		3	Daily	9:30			..... 1st & 3rd
Sewing 1b and 2a..			Daily	12:20			..... thirds
Sewing 2b.....		3			T. Th.	{ 2:00 3:40	..... 1st third
					W. F.	{ 2:00 3:40	..... last two
					Daily	{ 9:30 11:10	..... thirds
Sewing 3 and 4a...		3					.....
Sewing 5 and 6.....		3	Daily	9:30			.....
Sewing 7 and 8.....		2	W. F.	{ 2:00 3:40			..... .....
Sewing (Art Needle Work).....		3	W. F.	{ 2:00 3:40			..... 1st term
Sociology.....		3	{ W. F. S.	{ 9:30 10:20			..... .....
Stenography 1.....		4			Daily	{ 2:00 3:40	..........
Stenography 2.....		4			Daily	{ 2:00 3:40	..........
Trade and Trans- portation.....		3	T. W. F.	10:20			.....
Typewriting 1.....	1	2	Daily	2:00			.....
Typewriting 1.....	2	2	Daily	2:00			.....
Typewriting 2.....		2	Daily	12:20			.....
Veterinary Sci- ence 1.....		3	{ T. F. W.	{ 10:20 9:30			..... 2d term
Veterinary Sci- ence 2.....		4	T. Th. F. S.	12:20			..... 2d term

SUBJECT.	SECTION.	CREDIT.	RECITATION.		LABORATORY.		Part of Year.
			Days.	Hour.	Days.	Hour.	
Veterinary Science 3.....	4	}	T. S.	9:30	.....	.....	.....
			F.	12:20	.....	.....	.....
Zoology 1.....	1	2	Th. S.	10:20	S.	{ 2:00 3:40	..........
Zoology 1.....	2	2	T. W.	10:20	F.	{ 8:40 10:20	..........
Zoology 1.....	3	2	W. F.	12:20	S.	{ 9:30 11:10	..........
Zoology 1.....	4	2	W. F.	12:20	F.	{ 2:00 3:40	..........
Zoology 2.....	3	3	W. F.	10:20	W.	{ 2:00 4:30	..........
Zoology 3.....	2	Th. S.	9:30	.....	.....	.....	.....
Zoology 5 and 6....	3	T.	9:30	W.S.	{	2:00	.....
						4:30	.....

2nd w. & S - Eng 6 - 3 - 3
 3rd Daily Math 5 - 5 - 5
 2-4.30 {^J 3e Sat Eng (B A) - 3 - -
 8. 70 German I 3 - 3
 Agronomy III - - 3
 Chemistry II 5 - 5
 T9 19



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