OREGON AGRICULTURAL COLLEGE

1899-1900

ANNUAL CATALOGUE

OF THE

AGRICULTURAL COLLEGE

OF THE

STATE OF OREGON

FOR

1899-1900

AND

ANNOUNCEMENTS FOR 1900-1901.

CORVALLIS, OREGON.

AGRICULTURAL COLLEGE PRINTING OFFICE.
GEO. B. KEADY, PRINTER.
1900.

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HELEN V. CRAWFORD, B. S.,
Professor of Elocution.

* Resigned, to take effect June 30, 1900.
† After July 1, 1900.

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Assistant Professor of Chemistry and Assaying.

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THE STATION STAFF.

THOS. M. GATCH, M. A., PH. D.,
Director.

JAMES WITHYCOMBE,
Vice-Director and Agriculturist.

*G. W. SHAW, M. A., PH. D.,
Chemist.

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Entomologist.

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Chemist.

JOHN F. FULTON, B. S.,
Assistant Chemist.

C. M. McKELLIPS, PH. C.,
Assistant Chemist.

F. L. KENT, B. S. AGR.,
Assistant Agriculturist and Dairy Instructor.

E. F. PERNOT,
Bacteriologist.

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Clerk and Purchasing Agent.

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Oregon Agricultural College.

HISTORY.

By an act approved by President Lincoln, July 2, 1862, a grant of land was made by the United States to each state in the Union in the amount of thirty thousand acres, or its equivalent, for each Senator and Representative to which the state was entitled by the apportionment of the census of 1860.

The proceeds under this act were to constitute a perpetual fund the principal of which was to remain forever undiminished; but interest arising from said fund in each state, which should avail itself of the benefits of the act, was to be applied inviolably to the support and maintenance of a "College where the leading objects 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 a 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 of life."

Ninety thousand acres of land were apportioned to Oregon, and by an Act approved October 9, 1862, the Legislative Assembly of Oregon accepted the provisions of the congressional law.

In 1868 the legislature appointed three commissioners to locate the land, which was done and the report submitted in 1870.

There were in 1868 no state colleges in Oregon, and the same legislature that provided for the location of the land gave the use of the funds that should arise from the sale of the land to the Corvallis College, in Benton county, an institution of learning under the control of the M. E. Church, South.

None of the land of the land grant having as yet been sold, the legislature made an annual appropriation to support the school until the fund to be derived from the grant should become sufficiently large for that purpose. The amount appropriated, while not large, accomplished the purpose: It kept "the feeble spark from expiring."

In 1885 the church voluntarily relinquished its claim on the funds of the Agricultural College, and the state resumed control vesting the general control of the college in a board of regents, granting full power to that end.

In the summer of 1887 the corner-stone of a brick structure was laid by the Governor of Oregon amid imposing ceremonies. This structure, the new Agricultural College, erected by citizens of Benton county on the Agricultural College farm, was the nucleus around which other buildings soon began to cluster as necessity and growing interests demanded.

For a year or two there was ample room; but like a healthy plant placed in good soil, the institution expanded, until the original thirty-five acres have increased to nearly two hundred, and the first structure now proudly surveys its eight descendants.

THE MORRILL ACT.

On August 30, 1890, "An Act" was passed by Congress "to apply a portion of the proceeds of the public lands to

the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts established under the provisions of an act of Congress approved July 2, 1862.

This act provided that in 1890, $15,000 should be paid to these land grant colleges and that the amount so appropriated should be increased by the sum of $1,000 annually for ten years, and that thereafter the amount annually appropriated should continue to be $25,000.

It is provided in this act that this money shall be "applied only to instruction in agriculture, the mechanic arts, the English language and the various branches of mathematical, physical, natural and economic sciences with special reference to their application in the industries of life, and to the facilities for such instruction." But it is provided that "no portion of said moneys shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings."

THE HATCH ACT.

In addition to the above, this college receives from the United States, under the "Hatch Bill" of 1887, the sum of $15,000 a year for experimenting in agriculture. With this sum it supports an agricultural experiment station in connection with the college. As this "Hatch Fund" is used entirely for experiment work, it adds nothing to the income available for educational purposes. But the experiment station is valuable to students in agriculture in giving them practical illustration in many agricultural and horticultural processes.

LOCATION.

The State Agricultural College is located at Corvallis, Oregon, near the head of navigation on the Willamette river. The city, as its name indicates, is in the heart of this beautiful valley. To the east, on the distant horizon, may be seen the Cascades, with their snow-capped peaks, while to the west, and near at hand. is the Coast range. Mary's Peak, the tallest in the range, for several months of the year is covered with snow, and, though twenty miles away, adds beauty to the scene.

Corvallis is located on high ground, is healthful, and has not been visited by any dangerous, epidemic diseases. It is accessible by rail from the east, west, north and south.

The postoffice address is Corvallis, Benton Co., Oregon. The Pacific Postal and Western Union Telegraph Companies, and Wells, Fargo & Co's Express have offices in Corvallis.

BUILDINGS AND GROUNDS.

CAMPUS AND FARM.

The college grounds comprise 198.91 acres. Of this a tract of 35 acres in the immediate vicinity of the administration buildings constitutes the campus. This is tastefully laid out and adorned with trees, shrubbery, flower gardens, walks, and drives, and it is intended to have all of the native trees and shrubbery of the state represented on these grounds. On the campus are the grounds for military drill, base ball, foot ball, lawn tennis, bicycle track and general athletics. The college farm consists of about one hundred and fifty-five acres, and is to the west of the administration building. The farm is provided with barns, silos, piggery,

tool house, implements and stock, sufficient for the purpose of practical instruction in agriculture. One hundred acres of the farm are devoted to a variety of farm crops, grass plats, orchards, berry and vegetable plats, illustrative of the studies and experiments in agriculture and horticulture.

ADMINISTRATION BUILDING.

The administration building stands on a pleasant elevation to the west of Corvallis, and is a large substantial brick structure. This building contains many class rooms, chemical, pharmaceutical and zoological laboratories, library, chapel, museum, and the offices of the President, Dean, and Clerk of the College.

CHEMISTRY BUILDING.

This very neat building is located to the south of, and quite near, the administration building, and contains the station chemical laboratory, students' laboratory, and the office of the station and college chemist. The equipment of the department of chemistry is one of the most complete on the coast.

GYMNASIUM AND ARMORY.

South of the chemical building may be seen the very substantial structure of the gymnasium and armory, a building 70x120 feet, built of wood and stone. The main hall is used for commencement purposes. The basement, 12 feet high in the clear, contains the bowling alleys, physical culture rooms for men and women, commandant's quarters, etc.

The gymnasium, which is 20 feet to the under side of the trusses, has an unobstructed floor area of 8000 square feet. It is encircled by a suspended gallery six feet wide. A stage, with dressing rooms for men and women, occupies the east end of the main hall.

During the winter months this spacious building serves as a drill hall for the cadets, and the classes in physical culture.

HORTICULTURAL BUILDING.

This building stands north of the administration building, and contains a class room and laboratory for the department of floriculture, and the office and laboratory of the bacteriologist of the station.

Adjoining this building are the spacious greenhouses which contain an extensive and typical collection of florist's plants.

POWER HOUSE.

To the west of the administration building is located the power house, a roomy, one story brick structure containing, in the north wing, one forty-five horse power engine with two electric generators of two hundred light capacity each, which furnish light for all the principal buildings, including the armory and the dormitories, as well as power for mechanical hall. The south wing, with cement floor, is all one large blacksmith shop containing twenty forges for the use of students taking the mechanical and agricultural courses.

MECHANICAL HALL.

One of the most substantial, as well as elegant, structures on the campus is mechanical hall, recently finished. With

its solid stone walls and galvanized iron roof it is a fine example of modern architecture.

On the first floor are found the machine shops, the printing office, the physical laboratory and various recitation rooms and the office of the professor of mechanical engineering; while the rooms in the upper story are occupied by the departments of botany and horticulture, mathematics and civil engineering, and the classes in woodworking, mechanical and freehand drawing.

DAIRY BUILDING.

The Dairy building is located west of Alpha hall, and contains a complete system of apparatus for giving practical instruction in its line of work. It also contains the office of the dairy instructor.

CAUTHORN HALL.

This is a large and comfortable building, four stories high, well provided with water, steam heat, and electric lights.

The dining room, kitchen, and club rooms of this building are commodious, pleasant, and well furnished. There is room sufficient to accommodate about one hundred students.

ALPHA HALL.

This is a cheerful and delightful home for the young women students. It is two stories high and contains rooms for thirty young ladies, besides pleasant reception and music rooms and a commodious dining hall. It is lighted by electricity and provided with excellent water.

THE HEATING PLANT.

This very important part of the college equipment was completed in October, 1899, and has proved to be far more efficient than the stoves, the hot air and hot water systems which had before been used in supplying the various buildings with heat. The plant has all the latest and best steam-heating appliances and has a capacity sufficient to keep the recitation rooms at a summer temperature on the coldest days. The building, with a base 33 feet square and a height of 15 feet, is made of brick and stone, and has a brick chimney 65 feet in height. The steam is furnished by a battery of two steel boilers, seventy-five horse power each, which is connected with the buildings by double lines of steam pipes running through under-ground brick conduits.

All of the rooms in the administration and chemical buildings, the mechanical hall, the horticultural building and the greenhouses are supplied with heat from this plant, and it is probable that Alpha hall and the Armory will be supplied from the same source as soon as the resources of the institution will admit.

STUDENT LIFE.

CAUTHORN HALL CLUB.

Cauthorn hall club is under the management of Professor and Mrs. Horner. During the coming year, this club will be conducted on the co-operative plan. A nominal fee will be charged for rent and electric lights. The expense of living at the club therefore will be but little more than the actual outlay for help, wood, groceries, vegetables, etc. The maximum cost is not to exceed $2.50 per week.

To become a member of Cauthorn hall club it will be

necessary for the applicant to give satisfactory evidence of his ability to govern himself. To join the club prior to January 1, he will be required to pay in advance a fee of ten dollars; to join after January 1 and before April 1, eight dollars; to join later than April 1, five dollars. This fee will be set aside for wood, rent, lights and repairs to rooms, and the portion of the fee unexpended for this purpose will be returned to the student at the close of the year or at the expiration of his membership. It will also be necessary for him to pay upon entrance and on or before the first day of each succeeding month during his membership with the club ten dollars to be used in defraying other necessary expenses. At the close of each month the unexpended balance of this fund will be applied to the reduction of such fund to be paid for the succeeding month.

Each room of the hall is furnished with a table, chairs, a chest with drawers, a bedstead, springs, mattress, pillow and mirror. Hence the student is expected to furnish sheets, pillow cases, blankets, quilts, towels, broom, dustpan, washbowl and pitcher, comb, brushes, tumblers, carpet or matting, pictures and other things that will make his room comfortable and homelike. He should bring a dictionary and such other books as are used for study, for reference, and for profitable entertainment.

The hall is furnished with a reading room which is supplied by the club with some choice current literature.

For further information send for special circular.

ALPHA HALL.

Alpha or young ladies' hall will be continued the coming year under the management of Miss Snell, the immediate charge being delegated to a competent assistant.

A circular, stating price of board and containing detailed information regarding all necessary matter, will be issued early in July of this year and may be had on application to the college clerk.

The hall is healthfully located, lighted by electricity, and supplied with excellent water. A tennis court and facilities for other games render the hall grounds most attractive.

Applicants for rooms must present satisfactory certificates of good character.

There will be a charge of $4.00 per month for room, light, heat and service, and board in the hall may be had for $8.00.

SOCIAL LIFE OF THE STUDENTS.

The social life of students is not neglected. The college has six active literary societies which meet every week. Once a term each society gives a social attended by some member of the faculty. Literary contests are common events, the societies meeting in joint session, with prominent citizens as judges. The Y. M. C. A. and Y. W. C. A. hold their regular sessions at the college every Sunday afternoon. These gatherings aid materially in developing the social and spiritual life of the members. Each year a popular course of lectures free to all students is given, under the direction of the faculty, by distinguished speakers from various parts of the state. At the chapel period the students meet with the faculty in song, prayer and scriptural reading, usually followed with orations by the seniors or with musical or rhetorical exercises by other students. Vocal and instrumental music intersperse various features of the college work, so that a student in a career of four years may not leave the institution without the refining influences of this important art. Physical culture is encouraged in every

way at the gymnasium and on the training grounds. Bowling, fencing, Indian-club swinging, dumb-bell exercises, foot ball, basket ball, base ball, and lawn tennis occupy the spare moments of the students in a happy commingling of all classes. Hardly a month passes when there is not a friendly contest with some other institution of learning in some athletic sport. These social affairs, although under the direction of a committee of the faculty, are managed by the students who thereby acquire a training in social life destined to be of great value to them.

Corvallis is pre-eminently a college town noted for social clubs, literary societies, and active churches which vie with each other in friendly interest and hospitality toward our young people. More and more as the institution progresses patrons of the college move hither that they may be with their children and at the same time enjoy the refining influences and cultured society of a college community.

SOCIETIES.

The students maintain several literary societies, three for young ladies and three for young gentlemen. These societies are of a semi-fraternal nature, offering to their members social as well as literary advantages. The exercises consist principally of essays, declamations, debates and music. Public and joint meetings are held by permission of the faculty. Many other features of college life, social and literary, are under their supervision. Students are elected to membership by those already belonging to the societies.

The following is a list of the different societies now in existence:

For young ladies: Sorosis, Pierian, Feronian.

For young men: Amicitia, Jeffersonian, Philadelphian.

The membership of each of these societies is limited to forty. They are all in a flourishing condition.

The students also maintain active branches of both the college Y. M. C. A. and Y. W. C. A.

In March, 1896, the literary societies of the college began the publication of a monthly periodical, the "College Barometer." The enterprise met with marked success, and the paper, controlled entirely by students, now wields a strong influence in all college affairs. During the coming year every effort will be made to improve it and make it of interest not only to those directly connected with the school, but to all who are in touch with literary, scientific and industrial education. The editors will be pleased to receive news of alumni and other persons formerly connected with the college. Brief, pointed notes, accounts of scientific experiments and discoveries, and short, well-written and instructive literary articles are also solicited.

ATHLETIC ASSOCIATION.

The students of the college maintain an athletic association which is governed by the following rules and regulations:

1. The athletic association of the college shall have immediate charge of, and be responsible for, the proper conduct of all athletic games of the college, under the supervision of the athletic committee of the faculty.

2. A candidate for any position on an athletic team, bearing the colors and name of the Oregon Agricultural College, shall be of good moral character, shall not fall below a passing grade in more than one study, and shall have matriculated during the first month of the college year, or at least three months before applying for membership on such team.

3. A committee on athletics, composed of five members of the faculty shall have general supervision over all athletics of the college.

4. All action of athletic clubs must be referred to this committee for its approval.

5. All trainers employed by the clubs of the college must be of good moral character, and must be approved by the athletic committee.

6. No inter-collegiate, or other, contests shall be entered into without consent of the athletic committee.

7. In all athletics provision must be made by the athletic association to meet all expenses, whether for general or special athletics, so that the college name will not be involved in any way with bad debts.

8. No student who is excused from industrial work, or military drill, on account of physical disability, shall be allowed to engage in college athletics.

GOVERNMENT.

The college does not undertake to prescribe in detail either its requirements or prohibitions. Students are met on a plane of mutual regard and helpfulness. Our appeal is to a proper sense of the proprieties of life and the necessity of organization on such a basis.

Established by a government that recognizes no distinction of religious belief, the Oregon Agricultural College seeks neither to promote any creed nor to exclude any; but it will always do everything in its power to promote the religious spirit and life.

Whenever the college life of any student is such that his influence, directly or indirectly, is injurious to the work of the institution, he will be relieved from further attendance at this college.

All absences will be charged from the first recitation of the term.

COURSE OF LECTURES.

In addition to the regular lectures given in the various departments by members of the faculty, a course of lectures by representative men, is delivered at convenient intervals during the year. These lectures bring young people in contact with the leaders in the various departments of human endeavor; arouse investigation on current topics; stimulate students to emulate the achievements of specialists; give

breadth of scholarship to the student and aid in developing the character of the institution.

They rank among the most attractive features of college life and are free to all students.

CONDITIONS OF ADMISSION.

To enter the freshman year the applicant must be at least fifteen years of age, and must be able to pass a satisfactory examination in reading, spelling, geography, arithmetic (written and mental), United States history and English grammar.

Those applicants who have completed a high school course will be given proper credit for work accomplished, and all those who have finished a course in certain approved grammar schools, a list of which is given below, will be admitted to the freshman year on presentation of their diplomas.

SPECIAL STUDENTS.

Provision is made as follows to accommodate students who do not wish to enter the regular college courses:

Non-graduate, special students who may desire to attend regular classes in any department may do so on recommendation of the head of the department and the consent of the President.

Such special students must be at least eighteen years of age, and shall not be considered candidates for graduation.

Students will be admitted at any time to advanced classes on passing an examination upon the preceding subjects.

ADMISSION FROM OTHER COLLEGES.

Students from other colleges must show a certificate of good standing, or honorable dismissal. Such applicants

will receive credit for studies pursued in any college authorized to confer degrees, so far as the two courses are equivalent, upon presenting a certificate of standing from the proper officers.

ACCREDITED SCHOOLS.

Graduates from the following accredited schools will be admitted to the freshman year without examination:

Albany,
Astoria,
Ashland,
Athena,
Baker City,
Bandon (Major Conrse),
Bishop Scott Academy,
Corvallis,
Cottage Grove,
Coquille Collegiate Institute,
Elgin,
Enterprise Academy,
Eugene,
Forest Grove,
Garland Academy,
Grant's Pass,
Harrisbnrg,
Halsey,
Hillsboro High School,
Hnntington,
Heppner,
Hood River
Independence,
Jacksonville,
Jnnction City,
Klamath Falls,
La Grande,
La Creole Academy,
Lafayette High School,
Marshfield,
McMinnville,
Medford,
North Yamhill,
Oregon City,
Pendleton,
Portland,
Park Place,
Salem,
Santiam Academy,
The Dalles,
Union,
Wasco.

The above list is subject to annual revision.

SCOPE OF THE INSTITUTION.

The scope of the institution, as now organized, cannot be better stated than in the comprehensive words of the act of Congress defining the duty of this and similar colleges:

"The leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach snch branches of learning as are related to agriculture and the mechanic arts, in snch manner as the legislatnre of the state may prescribe, *in*

order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Based upon this broadened foundation, the special work of the Oregon Agricultural College is the training of youth in those branches of learning which lie at the foundation of modern industrial pursuits. In accordance with the purposes of its founders, and the terms of its original charter, it aims to give special and prominent attention to agriculture, both theoretical and experimental; but it also provides "a liberal and practical education," in the leading branches of mathematical, natural and physical sciences, in order to prepare youth "for the several pursuits and professions of life." It has increased its subjects and courses of study, and its teaching and illustrative equipment, to such an extent that now, "without excluding classical studies," its leading object is to teach the various sciences in such a manner as to show their applications in the more important industries, to combine with every branch of instruction such an amount of actual practice in the shop, the field, and the laboratory as will serve to illustrate and apply the theory, but without subordinating it. The course of study, as now arranged, conforms very closely to the recommendations of the *Association of American Agricultural Colleges and Experiment Stations.* The range of its work in this direction is shown, as far as the limits of space will allow, in the following descriptive statements and schedule. It is confidently believed that few institutions in the country furnish opportunities for obtaining advanced scientific education to an equal extent and thoroughness at so moderate a cost and with so many incidental advantages.

DEGREES AND COURSES OF STUDY.

UNDERGRADUATE WORK.

The courses offered at the college are arranged under four general heads—Agriculture, Mechanical and Electrical Engineering, Household Science, and Pharmacy—all of which require training in mathematics, history, English, elocution, drawing and such other branches as are requisite to a practical education.

Graduation requires four years of college work; and all the courses of study lead to the degree of Bachelor of Science. In order that the college may meet the needs of a greater number of people and the students intensify along special lines, much of the work is made elective, as may be seen by reference to the courses of study published elsewhere in this catalogue.

GRADUATE WORK.

That students may be encouraged to continue their college work after graduation, the board of regents has made provision for courses leading to advanced degrees.

ADVANCED DEGREES.

Advanced degrees will be given to graduates of this college, or similar, approved colleges, upon the following conditions:—

An applicant for a higher degree must present himself for examination in one major and at least one minor study. Major and minor courses leading to the degree of Master of

Science, to be selected from different departments, approved by the faculty, are provided for in the departments of Agriculture, Botany, Chemistry, Economics, Horticulture, Zoology, Mechanical and Electrical Engineering and Household Science. The minor, at the option of the student, may also be taken from the departments of Mathematics, History or Modern Languages. The candidate must prepare a thesis, based upon original research, which shall show scholarly acquirements of a high order. This thesis must be printed or typewritten and bound, and three copies of it left in the college archives. The candidate must spend at least two academic years, or their equivalents, as a resident student at this college in preparing for this degree.

COURSE IN AGRICULTURE.

FRESHMAN YEAR.

FIRST TERM.

Algebra 5 ..... Mathematics I.
Grammar 5 ..... English I.
General History 5 ..... History I.
* Freehand Drawing 3 ..... Drawing I.
* Elocution 2 ..... Elocution I.
* Woodwork 5 ..... Shopwork I.
Military Drill 4 ..... Military I.

SECOND TERM.

Algebra 5 ..... Mathematics II.
Composition 5 ..... English II.
* General History 5 ..... History II.
Elocution 2 ..... Elocution II.
Freehand Drawing 3 ..... Drawing II.
Woodwork 5 ..... Shopwork II.
Military Drill 3 ..... Military I.

THIRD TERM.

Algebra 5 ..... Mathematics III.
Composition 5 ..... English III.
Plant Morphology 5 ..... Botany I.
Breeds of Stock 5 ..... Agriculture I.
* Freehand Drawing 5 ..... Drawing III.
Military Drill 5 ..... Military I.

SOPHOMORE YEAR.

FIRST TERM.

Geometry 5 ..... Mathematics IV.
Rhetoric 5 ..... English IV.
*Plant Histology 7 ..... Botany II.
Dairying 2½ ..... Agriculture II.
Drainage 2½ ..... Agriculture III.
Blacksmithing 3 ..... Shopwork IV.
Military Drill 4 ..... Military I.

SECOND TERM.

Geometry 5 ..... Mathematics V.
Chemistry 7 ..... Chemistry I.
Rhetoric 4 ..... English V.
*Soils and Manures 5 ..... Agriculture IV.
Blacksmithing 5 ..... Shopwork V.
Military Drill 3 ..... Military I.

THIRD TERM.

*Trigonometry 5 ..... Mathematics VI.
Chemistry 7 ..... Chemistry II.
English Literature 5 ..... English VI.
Zoology 7 ..... Zoology I.
Military Drill 5 ..... Military I.

JUNIOR YEAR.

FIRST TERM.

Plant Physiology 7 ..... Botany III.
*Entomology 7 ..... Zoology II.
Qualitative Analysis 7 ..... Chemistry III and XI.
Dairying 5 ..... Agriculture V.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

SECOND TERM.

*Literature 5 ..... English VII.
Physics 7 ..... Physics I.
Vertebrate Anatomy 7 ..... Zoology III.
Agricultural Chemistry 5 ..... Chemistry IV.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

THIRD TERM.

*Surveying 7 ..... Mathematics X.
Physics 7 ..... Physics II.
Stock Feeding and Breeding 4 ..... Agriculture VI.
Physiology 5 ..... Zoology IV.
Steam Engine 2 ..... Mechanics IV.
Military 5 ..... Military I.

SENIOR YEAR.

FIRST TERM.

Economics 5.....Political Science I.
Veterinary Science 5, or,.....Agriculture VII.
Horticulture 5.....Horticulture I.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

†*Electives.*

German 5, or,.....German X.
Latin 5.....Latin X.
Chemistry 7.....Chemistry V.
Mineralogy 7.....Chemistry VI.
Botany 7.....Botany IV.
Zoology 7.....Zoology VI.
Bacteriology 7.....Bacteriology I.

SECOND TERM.

Psychology 5.....Mental Science I.
Veterinary Science 5, or,.....Agriculture VIII.
Horticulture 5.....Horticulture II.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

†*Electives.*

German 5, or,.....German XI.
Latin 5.....Latin XI.
Botany 7.....Botany V.
Chemistry 7.....Chemistry VII.
Zoology 7.....Zoology VII.
Bacteriology 7.....Bacteriology II.

Assaying 7.....Chemistry VIII.
Elocution 2.....Elocution V.

THIRD TERM.

Veterinary Science 5, or,.....Agriculture IX.
Horticulture 5.....Horticulture III.
Civics 5.....History V.

†*Electives.*

Military Drill 5.....Military I.
American Literature 5.....English VIII.
German 5, or,.....German XII.
Latin 5.....Latin XII.
Astronomy 5.....Mathematics XI.
Agricultural Engineering 5.....Mathematics XII.
Botany 7.....Botany VI or VII.
Zoology 7.....Zoology VIII.
Geology 5.....Geology I.
Chemistry 7.....Chemistry IX.
Bacteriology 7.....Bacteriology III.
Assaying 7.....Chemistry X.

*Latin or German may be elected instead.

†In addition to the required studies seniors must select from the electives a sufficient number of hours to form a full course, viz: 25 hours.

COURSE IN HOUSEHOLD SCIENCE.

FRESHMAN YEAR.

FIRST TERM.

Algebra 5 ..... Mathematics I.
Grammar 5 ..... English I.
General History 5 ..... History I.
* { Freehand Drawing 3 ..... Drawing I.
  { Elocution 2 ..... Elocution I.
General Hygiene 1 ..... Household Science I.
Sewing 4 ..... Household Science II.
Physical Culture 3 ..... Physical Culture I.

SECOND TERM.

Algebra 5 ..... Mathematics II.
Composition 5 ..... English II.
*General History 5 ..... History II.
Elocution 2 ..... Elocution II.
Freehand Drawing 3 ..... Drawing II.
Etiquette 1 ..... Household Science V.
Sewing 4 ..... Household Science II.
Physical Culture 3 ..... Physical Culture I.

THIRD TERM.

Algebra 5 ..... Mathematics III.
Composition 5 ..... English III.
Plant Morphology 5 ..... Botany I.
*Freehand Drawing 5 ..... Drawing III.
Sewing 5 ..... Household Science II.
Physical Culture 3 ..... Physical Culture I.

SOPHOMORE YEAR.

FIRST TERM.

Geometry 5.....Mathematics IV.
*Plant Histology 7.....Botany II.
Rhetoric 5.....English IV.
Dressmaking 5.....Household Science III.
Elocution 2.....Elocution III.
Physical Culture 3.....Physical Culture II.

SECOND TERM.

Geometry 5.....Mathematics V.
History of Eastern Peoples 5.....History III.
Chemistry 7.....Chemistry I.
Rhetoric 4.....English V.
Dressmaking 5.....Household Science III.
Physical Culture 2.....Physical Culture II.

THIRD TERM.

English Literature 5.....English VI.
Zoology 7.....Zoology II.
Chemistry 7.....Chemistry II and III.
Modern History 5.....History IV.
*Dressmaking 5.....Household Science III.

JUNIOR YEAR.

FIRST TERM.

Plant Physiology 7 ..... Botany III.
Entomology 7 ..... Zoology II.
Chemistry 7 ..... Chemistry III and XI.
German 5, or, ... German VII.
Latin 5 ..... Latin VII.
Cookery 3 ..... Household Science IV.

SECOND TERM.

Literature 5 ..... English VII.
Floriculture 5 ..... Floriculture I.
German 5, or, ... German VIII.
Latin 5 ..... Latin VIII.
Vertebrate Anatomy 7 ..... Zoology III.
Cookery 3 ..... Household Science IV.
Physical Culture 3 ..... Physical Culture III.

THIRD TERM.

Dairying 5, or, ... Agriculture V.
American Literature 5 ..... English VIII.
German 5, or, ... German IX.
Latin 5 ..... Latin IX.
Physiology 5 ..... Zoology IV.
Civics 5 ..... History V.
Cookery 3 ..... Household Science IV.

SENIOR YEAR.

FIRST TERM.

Economics 5.....Political Science I.
Aesthetics 5.....Household Science VI.
German 5, or,.....German X.
Latin 5.....Latin X.

†*Electives.*

Botany 7.....Botany IV.
Zoology 7.....Zoology V.
Chemistry of Foods 7.....Chemistry XII.
Bacteriology 7.....Bacteriology I.
Elocution 2.....Elocution IV.
Drawing 5.....Drawing IV.

SECOND TERM.

Psychology 5.....Mental Science I.
German 5 or.....German XI.
Latin 5.....Latin XI.
Aesthetics 5.....Household Science VII.

†*Electives.*

Physics 7.....Physics I.
Chemistry of Foods 7.....Chemistry XII.
Zoology 7.....Zoology VI.
Botany 7.....Botany V.
Elocution 2.....Elocution V.
Drawing 5.....Drawing V.
Bacteriology 7.....Bacteriology II.

THIRD TERM.

Domestic Lectures 5.....Household Science VIII.
German 5, or,.....German XII.
Latin 5.....Latin XII.

†*Electives.*

Physics 7.....Physics II.
Geology 5.....Geology I.
Chemistry of Foods 7.....Chemistry XII.
Zoology 7.....Zoology VII.
Botany 7.....Botany VI.
Elocution 2.....Elocution VI.
Drawing 5.....Drawing VI.
Astronomy 5.....Mathematics XI.
Bacteriology 7.....Bacteriology III.
Landscape Gardening 5.....Horticulture III.

*Latin or German may be elected instead.

†In addition to the regular studies seniors must select from the electives enough hours to form a full course, viz: 25 hours.

COURSE IN MECHANICAL ENGINEERING

FRESHMAN YEAR.

FIRST TERM.

Algebra 5 ..... Mathematics I.
Grammar 5 ..... English I.
General History 5 ..... History I.
* { Freehand Drawing 3 ..... Drawing I.
  { Elocution 2 ..... Elocution I.
Woodwork 5 ..... Shopwork I.
Military Drill 4 ..... Military I.

SECOND TERM.

Algebra 5 ..... Mathematics II.
Composition 5 ..... English II.
*General History 5 ..... History II.
Elocution 2 ..... Elocution II.
Freehand Drawing 3 ..... Drawing II.
Woodwork 5 ..... Shopwork II.
Military Drill 3 ..... Military I.

THIRD TERM.

Algebra 5 ..... Mathematics III.
Composition 5 ..... English III.
Modern History 5 ..... History IV.
*Freehand Drawing 5 ..... Drawing III.
Woodwork 5 ..... Shopwork III.
Military Drill 5 ..... Military I.

SOPHOMORE YEAR.

FIRST TERM.

Geometry 5 ..... Mathematics IV.
Rhetoric 5 ..... English IV.
Mechanical Drawing 10 ..... Mechanical Engineering I.
*Blacksmithing 5 ..... Shopwork IV.
Military Drill 4 ..... Military I.

SECOND TERM.

Geometry 5 ..... Mathematics V.
Chemistry 7 ..... Chemistry I.
Rhetoric 4 ..... English V.
*Mechanical Drawing 5 ..... Mechanical Engineering II.
Blacksmithing 5 ..... Shopwork V.
Military Drill 3 ..... Military I.

THIRD TERM.

Trigonometry 5 ..... Mathematics VI.
Chemistry 7 ..... Chemistry II and III.
English Literature 5 ..... English VI.
Mechanical Drawing 3 ..... Mechanical Engineering III.
Blacksmithing 5 ..... Shopwork VI.
*Military Drill 5 ..... Military I.

JUNIOR YEAR—MECHANICAL.

FIRST TERM.

*Literature 5 ..... English VII.
Mechanism 5 ..... Mechanical Engineering IV.
Analytical Geometry 5 ..... Mathematics VII.
Descriptive Geometry 5 ..... Mechanical Engineering V.
Machine Shop 5 ..... Shopwork VII.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

SECOND TERM.

Physiology 5 ..... Zoology V.
Physics 7 ..... Physics I.
*Descriptive Geometry 3 ..... Mechanical Engineering VI.
Calculus 5 ..... Mathematics VIII.
Machine Shop 5 ..... Shopwork VIII.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

THIRD TERM.

Calculus 5 ..... Mathematics IX.
Physics 7 ..... Physics II.
Steam Engines and Boilers 4, Mechanical Engineering VII.
Civics 5 ..... History V.
*Machine Shop 4 ..... Shopwork IX.
Military Drill 5 ..... Military I.

SENIOR YEAR—MECHANICAL.

FIRST TERM.

Economics 5.....Political Science I.
Mechanics of Engineering 5, Mechanical Engineering VIII.
Thermodynamics 3.....Mechanical Engineering IX.
Physics 7.....Physics III.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

†*Electives.*

German 5, or,.....German X.
Latin 5.....Latin X.
Woodwork 5.....Shopwork X.
Ironwork 5.....Shopwork XI.
Mechanical Drawing 5.....Mechanical Engineering X.
Mineralogy 7.....Chemistry VI.

SECOND TERM.

Psychology 5.....Mental Science I.
Machine Design 3.....Mechanical Engineering XI.
Mechanics of Engineering 5, Mechanical Engineering XII.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

†*Electives.*

German 5, or,.....German XI.
Latin 5.....Latin XI.
Woodwork 5.....Shopwork XII.
Ironwork 5.....Shopwork XIII.
Mechanical Drawing 5.....Mechanical Engineering XIII.
Assaying 7.....Chemistry VIII.
Elocution 2.....Elocution V.

THIRD TERM.

Mechanics of Engineering 5..Mechanical Engineering XIV.
Machine Design 5.....Mechanical Engineering XV.

†*Electives.*

German 5, or,.....German XII.
Latin 5.....Latin XII.
Astronomy 5.....Mathematics XI.
American Literature 5.....English VIII.
Surveying 7.....Mathematics X.
Woodwork 5.....Shopwork XIV.
Ironwork 5.....Shopwork XV.
Mechanical Drawing 5.....Mechanical Engineering XVI.
Assaying 7.....Chemistry X.
Military Drill 5.....Military I.

‡Students wishing to specialize in electrical engineering may elect to do so at the beginning of the junior year.

†In addition to the regular studies seniors must select from the electives enough hours to form a full course, viz: 25 hours.

JUNIOR YEAR—ELECTRICAL.

FIRST TERM.

Descriptive Geometry 5.....Mechanical Engineering V.
Mechanism 5.....Mechanical Engineering IV.
Analytical Geometry 5.....Mathematics VII.
Physics 5.....Electrical Engineering I.
*Machine Shop 5.....Shopwork VII.
Military Drill 1½.....Military I.
Military Science ½.....Military II.

SECOND TERM.

Electricity and Magnetism 7....Electrical Engineering II.
*Literature 5.....English VII.
Descriptive Geometry 3.....Mechanical Engineering VI.
Calculus 5.....Mathematics VIII.
Machine Shop 5.....Shopwork VIII.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

THIRD TERM.

Calculus 5.....Mathematics IX.
Electricity and Magnetism 7...Electrical Engineering III.
Steam Engines and Boilers 4.Mechanical Engineering VII.
*Civics 5.....History V.
Machine Shop 4.....Shopwork IX,
Military Drill 5.....Military I.

SENIOR YEAR—ELECTRICAL.

FIRST TERM.

Economics 5 ..... Political Science I.
Mechanics of Engineering 5 . Mechanical Engineering VIII.
Alternating Currents and Dynamo Design 7 ..... Electrical Engineering IV.
Physics 7 ..... Physics III.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

SECOND TERM.

Psychology 5 ..... Mental Science I.
Machine Design 3 ..... Mechanical Engineering XI.
Mechanics of Engineering 5 . . Mechanical Engineering XII.
Alternating Currents and Dynamo Design 7 ..... Electrical Engineering V.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

†*Electives.*

German 5, or, ... German XI.
Latin 5 ..... Latin XI.
Woodwork 5 ..... Shopwork XII.
Ironwork 5 ..... Shopwork XIII.
Mechanical Drawing 5 ..... Mechanical Engineering XIII.
Assaying 7 ..... Chemistry VIII.
Elocution 2 ..... Elocution V.

THIRD TERM.

Mechanics of Engineering 5..Mechanical Engineering XIV.
Machine Design 5.....Mechanical Engineering XV.
Alternating Currents and Dynamo Design 7 } .... Electrical Engineering VI.

†*Electives.*

German 5, or,.....German XII.
Latin 5.....Latin XII.
Astronomy 5.....Mathematics XI.
American Literature, 5.....English VIII.
Surveying 7.....Mathematics X.
Woodwork 5.....Shopwork XIV.
Ironwork 5.....Shopwork XV.
Mechanical Drawing 5.....Mechanical Engineering XVI.
Assaying 7.....Chemistry X.

†In addition to the regular studies seniors must select from the electives enough hours to form a full course, viz: 25 hours.

COURSE IN PHARMACY.

FRESHMAN YEAR.

FIRST TERM.

Algebra 5.....Mathematics I.
Grammar 5.....English I.
General History 5.....History I.
Latin 5.....Latin I.
Freehand Drawing 3.....Drawing I.
Elocution 2.....Elocution I.
† Military Drill 4.....Military I.

SECOND TERM.

Algebra 5.....Mathematics II.
Composition 5.....English II.
Latin 5.....Latin II.
General History 5.....History II.
Freehand Drawing 3.....Drawing II.
Elocution 2.....Elocution II.
Military Drill 3.....Military I.

THIRD TERM.

Algebra 5.....Mathematics III.
Composition 5.....English III.
Latin 5.....Latin III.
Plant Morphology 5.....Botany I.
Zoology 7.....Zoology I.
Military Drill 5.....Military I.

SOPHOMORE YEAR.

FIRST TERM.

Geometry 5	Mathematics IV.
Rhetoric 5	English IV.
Latin 5	Latin IV.
Plant Histology 7	Botany II.
Military Drill 4	Military I.

SECOND TERM.

Geometry 5	Mathematics V.
Rhetoric 4	English V.
Latin 5	Latin V.
Vertebrate Anatomy 7	Zoology III.
Chemistry 7	Chemistry I.
Military Drill 3	Military I.

THIRD TERM.

Latin 5	Latin VI.
Civics 5	History V.
Plant Classification 7	Botany VII.
Chemistry 7	Chemistry II and III.
Modern History 5	History IV.
Military Drill 5	Military I.

JUNIOR YEAR.

FIRST TERM.

Literature 5 ..... English VII.
Medical Chemistry and Qualitative Analysis 7 ..... Chemistry X and XIII.
Pharmacognosy 2 ..... Pharmacy I.
Pharmacy 6 ..... Pharmacy II.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

SECOND TERM.

Medical Chemistry and Qualitative Analysis 8 ..... Chemistry X and XIII.
Pharmacognosy 2 ..... Pharmacy III.
Pharmacy 6 ..... Pharmacy IV.
Physics 7 ..... Physics I.
Military Drill 1½ ..... Military I.
Military Science 1½ ..... Military II.

THIRD TERM.

Medical Chemistry 5 ..... Chemistry X.
Physiology 5 ..... Zoology IV.
Physics 7 ..... Physics II.
Therapeutics and Doses 2 ..... Pharmacy V.
Nomenclature 1 ..... Pharmacy VI.
Pharmacy 4 ..... Pharmacy VII.
Military Drill 5 ..... Military I.

SENIOR YEAR.

FIRST TERM.

Materia Medica and Therapeutics 3.....Pharmacy VIII.
Operative Pharmacy 4.....Pharmacy IX.
Prescription Practice 7.....Pharmacy X.
Quantitative Analysis 10.....Chemistry V.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

SECOND TERM.

Materia Medica and Therapeutics 3.....Pharmacy VIII.
Operative Pharmacy 4.....Pharmacy IX.
Prescription Practice 6.....Pharmacy X.
Pharmaceutical Analysis 10.....Chemistry XV.
Military Drill 1½.....Military I.
Military Science 1½.....Military II.

THIRD TERM.

Pharmacognosy and Synonyms 3.....Pharmacy XI.
Prescription Practice 6.....Pharmacy X.
Pharmacy 2.....Pharmacy XII.
Toxicology 1.....Pharmacy XIII.
Pharmaceutical Analysis 10.....Chemistry XV.
*Military Drill 5.....Military I.

NOTE.—†Young ladies take physical culture instead.
*Elective.

SUB-FRESHMAN YEAR.

The course of instruction offered under this head is intended for young people who live at considerable distance from an academy or high school, and were unable to attend such, but have finished the eighth grade in a good public school. No tuition is charged. The work is distributed in the three terms as follows:

FIRST TERM.	SECOND TERM.	THIRD TERM.
English Grammar.	English Grammar.	Grammar and Composition.
Composition.	Composition.	
Arithmetic.	Elementary Algebra.	Algebra.
History of the United States.	History of the United States.	Physical Geography.
		Book-keeping.

According to a regulation of the board of regents no students may be admitted to this class who come from towns or cities of more than fifteen hundred inhabitants, or from such as are supporting good high schools. To enter this class, students must be fifteen years of age.

DEPARTMENTS OF INSTRUCTION.

MENTAL AND POLITICAL SCIENCE.
AGRICULTURE.
HISTORY AND LATIN.
HOUSEHOLD SCIENCE.
MODERN LANGUAGES.
MECHANICAL AND ELECTRICAL ENGINEERING.
CHEMISTRY.
ENGLISH LANGUAGE AND LITERATURE.
MATHEMATICS AND CIVIL ENGINEERING.
ZOOLOGY.
BOTANY AND HORTICULTURE.
ELOCUTION AND PHYSICAL CULTURE.
FLORICULTURE AND GARDENING.
BACTERIOLOGY.
MUSIC.
DRAWING.
MILITARY.

MENTAL AND POLITICAL SCIENCE.

THOMAS M. GATCH, A. M., PH. D., PRESIDENT.

Conrse I.—*Economics.*—Senior year; first term. Dnring the first part of the term onr aim is to familiarize the stndent with the principles of the science. The last part of the term is devoted principally to debates, informal discnssions and theme work. Onr library is well snpplied with reference books in this department. Stndents are enconraged in original investigation. The labor qnestion, socialism, taxation, money and tariff receive attention. Five honrs a week. Ely's Ontlines.

Conrse II.—*Civics.*—Junior year; third term. Practical information is presented as to the rights and dnties which attach to American citizenship. Constant care is taken to give reasons as well as justification for each power exercised by our government, and to inculcate in every way the moral obligations of good citizenship. Five honrs a week. Willonghby, "Rights and Dnties of American Citizenship."

Course III.—*Psychology.*—Senior year; second term. This stndy presnpposes a considerable acqnaintance with the structure and functions of the brain and nervous system. Stndents acquire this knowledge in the laboratory nnder the direction of the professor of zoology. The intellectnal facnlties, the sensibilities and the will are carefully studied; the various schools of philosophy are criticised and compared and themes are often reqnired from members of the class. Five hours a week. Halleck.

AGRICULTURE.

JAMES WITHYCOMBE, Vice-Director and Professor of Agriculture.
F. L. KENT, B. Agr., Assistant Professor of Agriculture.
O. B. CONNOR, Foreman.

The object sought throughout the entire agricultural course is to familiarize the student with the art and science of agriculture. This embraces the study of zoology, botany, chemistry and bacteriology, the sciences related to agriculture; and the supplementary studies of mathematics, economics, physics, history, language and other cultural branches, all of which broaden the course of study and tend to elevate the educated farmer to the intellectual level of other professions.

The college laboratories are strictly modern in their appointments and are supplied with up-to-date equipments, which afford the student unusual opportunities for making a thorough study of all the sciences related to agriculture.

While the theory of agriculture, as based upon the sciences, is being taught, the industrial side is not overlooked. Instruction is given in wood and iron working in the carpenter and blacksmith shops under competent supervision. The student is also taught how to handle and care for steam machinery, and is made thoroughly familiar with the mechanism of the farm traction engine.

The instruction given in the class-room is directly supplemented by actual demonstrations of the best agricultural practice on the college farm, thus giving to the student an opportunity to observe the methods employed, and enabling

him to note from time to time the results of the practical applications of science to agricultural methods.

The college and station farm consists of 199 acres, 140 of which are devoted to farm crops, pasture, and experimental purposes. The farm is equipped with dairy building, horse-barn, cattle-barn, silos, piggery, tool-house, engine-house, etc., and with typical specimens of several breeds of stock.

Students laboring on the farm and in gardens, receive pay at the rate of 10 cents per hour. Only comparatively few persons can be so employed, as the amount of work to be done is limited. Those only who by their work prove to be valuable laborers will be employed.

DAIRYING.

One of the purposes of the Oregon Agricultural College is to advance the business industries of the state. It is believed that dairying is one of the most important lines of work that can now be undertaken in Oregon. There is now a large body of land in the state which is especially adapted to this industry. For this reason dairying has been introduced as a branch of study in the agricultural course. A separate building has been provided for such instruction and it is fitted up with all the necessary machinery for carrying on the work in the most approved way. An expert dairyman is in charge of this work.

All students in the agricultural department will be required to study dairying not only as a science but as an art. Those taking the household science course will have the same opportunities as the agricultural students.

This is a line of practical work which, it is believed, will prove of great advantage both to the student and to the

state. The practical instruction includes both butter and cheese making.

A short course has been provided, as described elsewhere in the catalogue, whereby practical instruction in dairying may be obtained by those who can not avail themselves of a college course.

The instruction in applied agriculture extends through the freshman, sophomore, junior and senior years, as shown in the following synopsis of courses:

Course I.—*Breeds of Stock.*—Freshman year; third term. The study of the history of the different classes of farm stock, their origin and characteristics. By means of charts, in the class-room the student is made familiar with the different points of animal form preparatory to the use of the score-card system for judging farm animals. This is followed by a practical application of this system in judging dairy cows, beef cattle, mutton sheep and swine. In this manner the student obtains useful information relative to animal form and function, and thus becomes acquainted with the points of excellence in the typical pure bred, as well as the points of merit in the animal designed for the butcher's block. Five hours a week.

Course II.—*Theoretical Dairying.*—Sophomore year; first term. Theoretical dairying will be taught in the class-room for one-half term. Instruction will be given by text-book and lectures. Five hours a week for one-half term.

Course III.—*Drainage.*—Sophomore year; first term. The stndy of the general principles of drainage; laying out and construction of farm drains; the effects of drainage npon the chemical and physical conditions of the soil. Five hours per week for one-half term.

Course IV.—*Soils and Manures.*—Sophomore year; second

term. The origin and formation of soils; soil tillage; management and application of manures; green manuring; organic and mineral manures; soil exhaustion; rotation of crops, and methods of improving worn-out soils. Five hours a week.

Course V.—*Dairying*.—Junior year; first term. (*a*) Practical work in the dairy for agricultural students. The principles taught in the sophomore year will be put into practice in the actual work of the manufacture of butter and cheese. The Babcock test, rennet tests, and curd tests, as well as the subjects of creamery accounting will receive due attention. Five hours a week.

(*b*) Practical work in the dairy for household science students. This work is practically the same as above. Wing's "Milk and its Products" will also be used as a text during a portion of the term. Five hours a week throughout the third term.

Course VI.—*Stock Feeding and Breeding*.—Junior year; third term. Stock feeding covers the subject of rations for milk and meat production; how best balanced for economical feeding. Stock breeding covers the subjects of atavism, heredity, in-and-in-breeding, variation, pre-potency and care of breeding animals. Opportunity is given for judging and scoring live stock, and for studying the essential points of breeds adapted to different purposes. Four hours a week.

Course VII.—*Veterinary Science*.—Senior year; first term. This subject will be taught by lectures covering the anatomy of the horse, and taking up the diseases most common to domestic animals, giving causes, symptoms, and treatment for the same. Special stress is placed upon proper treatment to prevent disease in domestic animals. Five lectures a week.

Course VIII.—*Veterinary Science.*—Senior year; second term. Continuation of course VII. Five lectures a week.

Course IX.—*Veterinary Science.*—Senior year; third term. A continuation of courses VII and VIII. Five lectures a week.

Instruction is given largely by lectures, suitable books being selected for reference. Miles' book on drainage. Curtis' "Horses, Cattle, Sheep, and Swine." Warfield's "Cattle Breeding," Stewart's "Stock Feeding." Armsby's Manual of Cattle Feeding. Wing's "Milk and its Products." Shaw's "Study of Breeds." "Soil" by King. "Fertility of Soil" by I. P. Roberts.

HISTORY AND LATIN.

F. BERCHTOLD, A. M., Dean of College.

HISTORY.

The study of history is begun in the freshman year with Myers' General History as a guide.

The class reports for recitations in divisions of about thirty each, which enables the instructor to devote more attention to each individnal student.

Although using Myers' History as a quasi guide, it has been our practice to give each student independent work, as much as possible, and then to subject such research to unreserved criticism and freest discussion in the class-room. This encourages originality, the mind gains power, courage, becomes keen and able to sift the essential from the nonessential. From his constant contact with concrete materials, matter outside of his textbook, he acquires the rarest of qualities—historic sympathy.

Course I.—*Greek and Roman History.*—Freshman year; first term. Includes the study of general Hellenic development; the Athenian leadership; the Hellenistic or Alexandrian conquests and kingdoms. The political organizations of republican Rome in the prae-and post-Punic periods. Study on the pagan empire; Teutonic migrations. The Christian empire under Roman control. Five hours a week.

Course II.—*Mediæval History.*—Freshman year; second term. A study of social and political institutions from the fifth to the fifteenth centuries. Five hours a week.

Course III.—*History of Eastern Peoples.*—Sophomore year; second term. A survey of the history of China, Japan and India. Religion, arts and general culture of Egypt, Chaldæa, Assyria, Babylonia, Persia. Five hours a week.

Course IV.—*Modern History.*—Sophomore year; third term. This is a study of the era of the reformation and renaissance. (1490-1648). A general study of the age of Louis XIV., Frederick the Great, Anne and the Georges, Maria Teresa, and Peter the Great. The great French revolution and the wars of Napoleon. The states-general of 1789 to congress of Vienna, 1815. German and Italian freedom and unity. Discussions touching the material progress of the age; famous works of art; foundations, inventions, discoveries, enterprises, improvements and investigations.

The college is well supplied with wall maps, and charts, and there is a good working library of historical reference books.

In addition to the individual work of the student, as outlined above, lectures are given on the more important periods, viz., the great reformation, thirty years' war, English reformation, the French revolution, etc.

LATIN.

As may be seen in the outline of the courses of study, Latin is offered as an elective to the students in agriculture, and mechanical and electrical engineering. It is required of students in the pharmacy course. The young ladies of the household science course may elect either Latin or a modern language.

Course I.—*Elementary Latin.*—Freshman year; first term. First three declensions and first and second conjugations. Numerous exercises in translating Latin into English as

well as English into Latin. Latin reader: Collar's Via Latina.

Course II.—*Elementary Latin.*—Freshman year; second term. Declensions and regular conjugations finished. Review. Exercises in translating. Via Latina.

Course III.—*Elementary Latin.*—Freshman year; third term. Irregular verbs. Subjunctive mood. Ablative absolute. Sequence of tenses, etc. Exercises. Via Latina.

Courses IV to XII.—*Advanced Latin.*—Sophomore and succeeding years. The first year's instruction is largely grammatical, prominence being given to Latin writing as the best method of acquiring a mastery of the language, which is of such a character as to be eminently suggestive and helpful to the student of English. This preliminary work done, the student is then trained to appreciate its literature. Attention is called, during the reading of various authors, to those numerous problems in the history, thought and institutions of the Romans which illustrate similar phenomena noticeable among ourselves. The contribution of the Roman world to the language, literature, aud institutions of our time is so great that a thorough acquaintance with that life is of the highest educational value.

HOUSEHOLD SCIENCE.

MARGARET C. SNELL, M. D., Professor.
MARY AVERY, Assistant in Sewing.

Self interest, and public interest, make it apparent to every intelligent person how greatly in need are subjects pertaining to the home of being "touched to fine issues;" hence their introduction as studies into college curricula.

We have been reviled as "the most common schooled, and least cultivated, among all civilized nations," and this largely through our deplorable indifference to, and ignorance of, the common facts and necessities of life.

The home as we find it to-day has scant warrant that anything born of its teaching is worth while to impart, yet the problem grows of how to get better results, how to lessen the labor of the farmer's wife, the washer-woman, the cook, the boarding-house keeper, the city missionary, the school teacher, the woman of fashion.

The solution requires something more than the knitting of the brow over theories; there must be actual testing of these theories by practice in the college laboratory, if they are to have value and permanence. The precious acquisition of the scholar who *knows*, must be further supplemented by that of the artist who *does*.

The various subjects pertaining to home life are taught under the following heads:

Course I.—*General Hygiene.*—Freshman year; first term. Good health is acknowledged as one of the prime factors of success in life; lectures and talks on this important subject

are not neglected. The amenities of home, and readings on kindred topics, give mental occupation to the sewing hour. One hour a week.

Course II.—*Sewing.*—Freshman year. During the first term there are sewing lectures and practice work, one hour a day, on sewing samples. Here are acquired and strengthened those invisible impulses: industry, dexterity, patience, exactness. Four hours a week.

Second term, sewing continued. Four hours a week.

During the third term sewing is combined with the making of simple garments. Readings, conversation. Five hours a week.

Course III.—*Dressmaking.*—Sophomore year. Cleverness with scissors, tape line, and needle finds in dress-making, millinery, home furnishing, a large field for the application of art principles to the living, moving canvas of actual life.

Instruction in dressmaking is an important branch of domestic science. Lectures will be given on the following subjects: The methods of manufacturing thread, cloths and other dressmaking material; hygienic principles of dressmaking; study and sketching of drapery; history of costume, etc.

During the first term the work includes draughting and making simple skirts, cutting, fitting and making lined waists from pattern; a study of the texture of goods. Five hours a week.

Throughout the second and third terms instruction is given in draughting and making lined waists, matching stripes and plaids, study of woolen textiles. Five hours a week.

Course IV.—*Cookery.*—Junior year. The first term's work includes instruction in canning of fruits, one-half term; three

lectures; one hour a day practice work in the kitchen laboratory; technological cookery; preparatory work in chemistry of foods.

The second and third terms' instruction includes practice work in cookery. Three hours a week throughout the year.

Course V.—*Etiquette.*—Freshman year; second term. Lectures and talks on social forms and usages; the art of entertaining; readings on the art of conversation. Mahaffy. One hour a week.

Course VI.—Senior year; first term. Lectures and recitations on the subject of aesthetics.

The first term is given to the general subject of aesthetics in its relations to the subjective and objective world; the kinds and laws of beauty; class readings from various authors on aesthetics; the application of aesthetic principles to discourse as we find it illustrated in the great master pieces of literature. Five hours a week.

Course VII.—*Aesthetics.*—Senior year; second term. Application of aesthetic principles to the fine arts, with a study of the best authors on these varied subjects. The two arts receiving especial attention during the coming year will be architecture and music. Five hours a week.

Course VIII.—*Domestic Lectures.*—Senior year; third term. The term's work will include lectures on the following subjects: Special hygiene, including parentage, care of children, heredity, etc.; sanitation of the home; home furnishing; emergency lectures; fireside practice, etc. Five hours a week. Gleason's Special Hygiene.

MODERN LANGUAGES.

ELLEN J. CHAMBERLIN, A. M., Lady Dean.

Opportunity to study German is offered throughout the different courses except the course in pharmacy. We teach in a large measure by the conversational method. We aim to bring the student so far that he can read with ease and facility, and understand so much of the language as will be most helpful to him in practical life. A knowledge of German is a business possession of undoubted value for any young man, or young woman.

Courses I to VI.—*Elementary German.*—Collar's Eysenbach—German grammar; translation of easy prose and poetry as contained in Hewett's German reader. Composition.

Courses VII to XII.—*Advanced German.*—Nathan der Weise, Hauff's Das Kalte Herz, Fouque's Undine, Heyse's Anfang und Ende, Schiller's Wilhelm Tell; Maria Stuart; Das Lied von der Glocke. Eysenbach's grammar continued and reviewed. Composition; syntax.

MECHANICAL AND ELECTRICAL ENGINEERING.

GRANT A. COVELL, M. E., Professor.
E. C. HAYWARD, E. E., Assistant.
M. CLYDE PHILLIPS, B. M. E., Instructor in Ironwork and Drawing.
D. W. PRICHARD, Instructor in Woodwork.

Students in this department are allowed to choose either the course in mechanical engineering or the course in electrical engineering. Each course leads to the degree of Bachelor of Science, and the two courses are identical until the beginning of the junior year.

The course in mechanical engineering is intended especially for young men who expect to choose an industrial vocation and for those who are already, or expect to be, connected with some of the manufacturing establishments of the country.

The course in electrical engineering is designed to meet the needs of those who desire to turn their attention towards electrical science, the designing, the installation and the management of electric light and power plants, etc.

The shops are well equipped with tools and machinery from the best makers in the country; the idea being not only to have the shops well supplied with the necessary tools but also to make each shop a model as regards quality of equipment and systematic arrangement.

The uses of the various tools in the shop are taught by a series of exercise pieces which the student is required to make. After completing the exercises, the regular work consists in building and repairing machinery in the machine shop, mending farm implements, and making tools in the blacksmith shop, and other useful articles in the wood shop.

So far as possible, all work in the shops is executed from drawings and blue prints, which must be followed accurately.

In the drafting room the student begins with linear drawing and follows a progressive course until he is able to make complete working drawings of whole machines, and finally he is encouraged to produce designs of his own and to make complete drawings and blue prints of them.

The scientific principles involved in machines and mechanical movements are taught in the class-room, as well as the application of mathematics to problems in mechanical engineering. The student is required to solve original problems and to depend upon his own judgment and ingenuity as far as possible.

EQUIPMENT.

The machine shop is equipped with one 24" x 24" iron planer, one universal milling machine, one universal tool grinder, one radial drill, one 20" drill press, one 20" engine lathe, one 16" engine lathe, three 14" engine lathes, one 15" shaper, one emery grinder, two 10" speed lathes, twelve bench vises, and numerous small tools, such as hammers, chisels, drills, reamers, taps, dies, etc.

The blacksmith shop contains twenty stationary forges operated by an electric motor fan. Each forge is provided with anvil, hammers and tongs. The shop also contains two vises, a swedge block and a full set of swedges, fullers, and heading tools.

The woodshop contains one 4" four-sided moulder, one 24" surface planer, one iron saw table with rip and cut-off saws, one band saw, one jig saw, one 20" pattern maker's lathe, one post boring machine, four 12" wood-turning lathes, and twenty hand benches, each equipped with a set of tools con-

sisting of saws, planes, chisels and other small tools. Power is supplied by a 10 horse power electric motor.

The power house contains a 54 inch tubular boiler, pump, injector, feed water heater and a 40 horse power high speed automatic engine, belted direct to two 12½ kilowatt generators. These generators operate the motors in the machine shop, wood shop and blacksmith shop, and also furnish lights for the college buildings.

The steam, electrical and heating plants of the college furnish opportunity for much valuable experimental work in engineering, such as tests of boilers, engines, dynamos, motors, fans, pumps and injectors. The department is supplied with indicators, gauges, planimeters and other instruments to facilitate this work.

A Riehle testing machine of 50,000 pounds capacity, operated by an independent motor, affords means of testing the strength of metals, woods, stones or brick.

The following is an outline of the work done in the mechanical department:

SHOPWORK.

Courses I, II and III.—*Woodwork.*—Freshman year. A course in woodwork which includes carpentery, joinery and wood-turning, also the care and use of tools. Five hours a week throughout the year.

Courses IV, V and VI.—*Blacksmithing.*—Sophomore year. In this course the student is taught how to make and manage a forge fire; to shape iron by bending, drawing, upsetting and welding, and finally to make and temper cutting tools for the shops. Five hours a week.

Course VII.—*Machine Shop.*—Junior year; first term. This course is devoted principally to chipping, filing, polishing and hand work. Five hours a week.

Courses VIII and IX.—*Machine Shop.*—Junior year; second and third terms. These include a series of exercise pieces in turning, shaping, milling and drilling which the student is required to make from drawings. Five and four hours a week respectively.

Courses X, XII and XIV—*Woodwork.*—Senior year. These courses are elective and are intended for students who desire to specialize in this branch. Particular attention is given to the care and management of wood-working machines and to pattern-making. Five hours a week throughout the year.

Courses XI, XIII and XV.—*Ironwork.*—Senior year. These are elective courses and follow course IX. The work consists of constructing parts of machines, repair work, and making tools for the shops. Five hours a week throughout the year.

MECHANICAL ENGINEERING.

Courses I, II and III.—*Mechanical Drawing.*—Sophomore year. In these courses the student begins at once to make mechanical drawings of simple objects and finally makes sketches of machines from which working drawings are made. Ten hours, the first term; five hours the second term and three hours the third term.

Course IV.—*Mechanism.*—Junior year; first term. This course treats of the motion of machine parts, and is introductory to the course in machine design. Five hours a week.

Courses V and VI.—*Descriptive Geometry.*—Junior year; first and second terms. The work in these courses is largely drawing. It involves the solution of problems in projection and intersection of lines, surfaces and solids. Five and three hours a week respectively.

Course VII.—*Steam Engines and Boilers.*—Junior year; third term. A study of the construction, care and operation of steam engines and boilers; recitations and lectures. Four hours a week.

Course IX.—*Thermodynamics.*—Senior year; first term. Steam and other engines considered as heat engines. Two hours a week.

Courses VIII, XII and XIV.—*Mechanics of Engineering.*—Senior year. A course in applied mechanics. The first two terms are occupied with a discussion of statical and dynamical problems. During the last term the strength of materials is studied with special reference to beams, girders and trusses; also the mechanics of fluids relating to pressure, flow and carrying capacity of pipes and open ditches. Five hours a week throughout the year.

Courses XI and XV.—*Machine Design.*—Senior year; second and third terms. A course applying the principles brought out in the courses in mechanism and mechanics to the design and construction of machine parts. Numerous practical problems are solved, the data for many of them being taken from machines used in the college so that the student may compare his results with those used in practice. Considerable draughting is done in connection with this course. Three and five hours a week respectively.

PHYSICS.

Courses I and II.—*Elementary Physics.*—Junior year; second and third terms. These courses cover the usual topics of mechanics, heat, electricity and magnetism, sound and light. Instruction is given by means of lectures and recitations, alternating with laboratory practice. Seven hours a week.

Course III.—*Physics.*—Senior year; first term. A laboratory course, which is a continuation of the preceding courses, and deals more especially with experiments in heat, light, sound and electricity. Seven hours a week.

ELECTRICAL ENGINEERING.

Course I.—*Physics.*—Junior year; first term. A special course in elementary physics provided for students in electrical engineering, covering practically the same ground as courses I and II in Physics. Five hours a week.

Courses II and III.—*Electricity and Magnetism.*—Junior year; second and third terms. Dealing with the general theory of electricity and magnetism and their most common application in practice: such as the telephone, telegraph, electro-plating, electric lighting, etc. In the laboratory the student becomes familiar with the usual measurements employed by the electrical engineer. Special attention is given to the calculation of magnetic circuits, thus leading up to the course in dynamo design. Lectures, recitation and laboratory work. Seven hours a week.

Courses IV, V and VI.—(a) *Alternating currents.*—Senior year. Being a development of the elementary theory of alternating currents, using both the graphical and analytical methods of calculation. A continuation of courses II and III. Lectures and recitations. Two or three hours a week for the first two terms.

(b) *Dynamo Design.*—Theory and practice of the design of direct and alternating current dynamos and motors, including calculation and construction of field magnets, armatures, commutators, etc. Lectures and recitations, supplemented by the making of models in the laboratory. Three hours a week during the third term.

(c) *Laboratory.*—An advanced course, being a continuation of the laboratory work carried on in courses II and III, including, in addition to the more common measurements, the measurement of insulation resistance, location of faults in cables, and construction of apparatus. Four or five hours a week throughout the year. Taken together a, b and c require seven hours a week throughout the year.

CHEMISTRY AND PHARMACY.

*G. W. SHAW, A. M., PH. D., Professor.
†A. L. KNISELY, M. S., Professor.
JONH F. FULTON, B. S., Assistant Professor.
C. M. MCKELLIPS, PH. G., PH. C., Instructor.
E. J. LEA, B. S., Assistant.

The study of chemistry is begun in the second term of the sophomore year.

Course I.—*General Inorganic Chemistry.*—Non-metals.—Sophomore year; second term. A daily exercise throughout the second term is devoted to recitations, lectures and laboratory practice. In this course special attention is given to the fundamental principles of the science, which are suitably illustrated either by experiments performed by the student in the laboratory, or, when too intricate and expensive of time, by the instructor before the class in the lecture room. The elements are discussed individually as well as their more important compounds.

The *practicum* of this course consists of a series of laboratory exercises dealing with the elements studied and is designed to introduce the student to chemical manipulation. Seven hours a week.

Course II.—*General Inorganic Chemistry.*—Sophomore year; third term. The study of the metals is entered upon in the third term and is conducted similarly to the study of the non-metals. The more important metals are individually discussed under the following heads: history, occurrence

*Resigned, to take effect June 30, 1900.
†After July 1st, 1900.

in nature, properties, preparation, uses, tests, and compounds. Special attention is given to metals and their compounds which are of industrial importance.

The laboratory work of the third term consists of a study of the properties of the metals, being an introduction to qualitative analysis. Seven hours a week.

Course III.—*Qualitative Analysis.*—Junior year; first term. The student is required to apply and study the reactions involved in the ordinary methods of separation and identification of substances. The study includes the reactions, ordinarily used in qualitative analysis, but deals with only those substances usually met with in chemical work. The student repeatedly works through a scheme of separation in making qualitative analyses of unknown substances. Seven hours a week.

Course IV.—*Agricultural Chemistry.*—Junior year; second term. This course deals with the more intimate relation of the science to agriculture. Such topics as soil composition, elements essential to plant growth, soil exhaustion, fertilizers; chemistry of cattle foods, nutrition, dairy products and food adulteration are dealt with as fully as time permits. Prerequisites, courses I, II and III. Five hours a week.

Course V.—*Quantitative Analysis.*—Senior year; first term. The student is required to make the ordinary fundamental determinations of moisture, aluminum, calcium, magnesium, copper, lead, potash, sulfuric acid, phosphoric acid, chlorin, and carbonic acid by gravimetric processes; estimations by volumetric methods including alkalimetry, acidimetry, precipitation, and oxidation will be undertaken. The work is so planned as to familiarize the student with the standard gravimetric and volumetric methods. This is

a required course for all pharmacy students and is elective for students who have completed courses I, II and III. Seven hours a week.

Course VI.—*Determinative Mineralogy*.—Senior year; first term. An elective laboratory course open to seniors in both agricultural and mechanical courses. The student will make use of the blowpipe and reagents to determine and classify the more common metal-bearing rocks, and the ordinary gangues. Elective. Seven hours a week.

Course VII.—*Quantitative Analysis*.—Senior year; second term. A continuation of course V. Elective. Seven hours a week.

Course VIII.—*Assaying*.—Senior year; second term. A course in practical assaying of gold and silver ores. Must be preceded by courses I, II, III. Elective. Seven hours a week.

Course IX.—*Quantitative Analysis*.—Senior year; third term. A continuation of courses V and VII. Elective. Seven hours a week.

Course X.—*Assaying*. Senior year; third term. A continuation of course VIII. Elective. Seven hours a week.

Course XI.—*Chemistry of Common Life*.—Junior year; first term. This is a short course treating of organic compounds of common life. It alternates during the first term with course III. This work is required of all students in agricultural and household science courses.

Course XII.—*Chemistry of Foods*.—Senior year. An elective extending through the senior year in the household science course. It is an expansion of the work in course XI, but limited to a study of foods from a chemical and scientific standpoint. Seven hours a week.

Course XIII.—*Qualitative Analysis*.—Junior year; first

and second terms. This course is a continuation of course III, and is designed exclusively for pharmacy students. It gives practice in the analysis of unknown mixtures for both acids and bases with special reference to the needs of pharmacists. Seven and eight hours respectively.

Course XIV.—*Medical Chemistry.*—Junior year. This subject is open only to students of the pharmacy course. It alternates throughout the year with laboratory practice. It is a more advanced course in chemistry than I, II and III, and embraces inorganic and organic chemistry and toxicology. Seven hours the first term, eight the second and five the third.

Course XV.—*Pharmaceutical Analysis.*—Senior year; second and third terms. Under this head is taken up the separation, identification and determination of the active constituents of alkaloidal drugs; also the identification of the more important organic compounds. Ten hours a week.

GRADUATE ELECTIVES.

Elective work in chemistry is offered as a major or a minor subject for two years to candidates for the degree of Master of Science.

Advanced Analysis.—This course is intended for those who may desire to specialize in chemical work. It provides a greater variety of analytical work than can be given in course V. It offers such work as the following: analysis of limestone (complete) coal, iron ores, milk, butter, cheese, water, urine, sugar (both volumetric and polariscopic) as well as various minerals. A student desiring to investigate along any particular line, as mineral, sanitary, agricultural, may do so. This course is open as a major subject to students who have completed courses I, II, III and V. Others

who may elect chemistry as a major subject will be assigned work in accordance with their previous attainments in the subject. With the above course in analysis a parallel course of reading must be taken, upon which the student will be required to pass a satisfactory examination at the end of the year. The work of the last year will be left largely to the student's choice, subject to the approval of the head of the department, and will serve as the basis for a graduation thesis.

GEOLOGY.

Course I.—*Geology.*—Senior year; third term. The course opens with work designed to acquaint the student with the common rocks and minerals as to their physical characters and appearance. The geological and mineralogical cabinets offer abundant opportunity for the study of specimens. The remainder of the course consists in a study of the aqueous, atmospheric, igneous, and organic agents in the earth's history; the structure and arrangement of rocks and the order of succession of strata. Elective in the agricultural and household science courses.

PHARMACY.

Courses I and III.—*Pharmacognosy.*—Junior year; first and second terms. In these courses are considered both the gross structure and characteristics of the crude drugs and chemicals. The student is taught the appearance, taste, color, odor, fracture and habitat of the various crude drugs, and also receives careful drill on their Latin and English names. The student has access to the specimens for study, and special effort is made to train the senses to the recognition of each of the drugs considered.

The pharmacognosy of the senior year consists in a

thorough review of the work of the junior year and practice in the recognition of powders, liquids, chemicals, and pharmaceutical preparations. Two hours a week.

Courses II, IV and VII.—*Pharmacy.*—Junior year. The student begins with the first principles of pharmacy and gradually advances to the more difficult topics. It is expected that he will become thoroughly acquainted with the correct methods of compounding both simple and complex prescriptions and making the ordinary galenical preparations. Much attention is given throughout the course to the practical side of dispensing, and the student receives considerable individual attention from the instructor and a large amount of practical experience in the dispensing laboratory which is under the immediate charge of an experienced pharmacist.

The several processes involved in the manufacture of pharmaceutical preparations are subjected to systematic study. Various official and unofficial preparations are then taken up and considered separately.

The laboratory work consists of practice in the application of the processes considered in the class room. Each student makes independently a sufficient number of preparations to insure a thorough understanding of the processes and manipulation involved. Six hours a week first and second terms, four during the third.

Course V.—*Therapeutics and Doses.*—Junior year; third term. The therapeutical uses of medicines serve as a basis for classifying them in a mauner which will facilitate study. The definitions of medical terms are given special attention in the junior year. In this connection the student also learns the minimum and maximum doses of all

remedial agents in active use in the modern practice of medicine. Two hours a week.

Course VI.—*Nomenclature.*—Junior year; third term. A recitation course on the Latin titles of the Pharmacopœia, National Formulary, etc. One hour a week.

Course VIII.—*Materia Medica and Therapeutics.*—Senior year; first and second terms. All substances which find use in medicine are here studied one by one as to source, Latin and English names, formula (in the case of chemicals), compounds and preparations, properties, method of preservation, industrial and domestic use, impurities and adulterations, antidote (in case of poisons) and dose.

In the consideration of crude organic drugs, attention is especially directed to the constituents responsible for the medicinal activity of the drug, e. g., alkaloids, glucosides, volatile oils, etc. Three hours a week.

Course IX.—*Operative Pharmacy.*—Senior year; first and second terms. This course is a continuation of that in pharmacy in the junior year. It includes the preparations of the Pharmacopœia not considered in the junior year. Attention is given to the more difficult galenical preparations and the newer classes of remedies, elegant preparations, toilet articles, etc.

A large amount of work is required in the manufacture of difficult galenical preparations; also cachets, soft capsules, compressed tablets, triturates, and toilet articles. Four hours a week.

Course X.—*Prescription Practice.*—Senior year. The recitation work consists of reading, interpreting, criticising prescriptions and calculating doses. Special attention is given to incompatibilities and to the solubility of chemicals. Unsightly, dangerous and explosive mixtures are also con-

sidered under this head. In this laboratory course and that of operative pharmacy the student gains experience for the prescription counter, learning the difficulties there met with and how best to overcome them. He also gains in manipulative skill in making extemporaneous preparations.

Each student is required to personally perform the operations under the direct supervision of the instructor. The student works not from book prescriptions, but from prescriptions written in the ordinary practice of physicians and found on file in the drug stores. Seven hours a week first term; six hours a week second and third terms.

Course XI.—*Pharmacognosy and Synonyms.*—Senior year; third term. The pharmacognosy of the senior year consists in a thorough review of the work of the junior year and practice in the recognition of powders, liquids, chemicals, and pharmaceutical preparations.

In addition to the knowledge of the scientific classifications of the medicines already considered up to this time, the student is further instructed regarding many "common names," or synonyms, in general use in the ordinary practice of pharmacy. Three hours a week.

Course XII.—*Pharmacy.*—Senior year; third term. Consideration is given to the composition of the more important galenical preparations of the United States Pharmacopœia. The percentage strength of the active ingredients, in each case, is learned. A general review of the theoretical work of the last two years is taken up at this point. Two hours a week.

Course XIII.—*Toxicology.*—Senior year; third term. The important active poisons—both mineral and vegetable—are studied. Their physiological action, characteristic

symptoms that follow their use, treatment and antidote are noted and commented upon. One hour a week.

From time to time special lectures are given on hygiene, pharmaceutical jurisprudence, etc.

STATE EXAMINATION AND REGISTRATION.

At its meeting held on December 14, 1898, the Oregon State Board of Pharmacy passed the following resolutions endorsing the course here offered:

WHEREAS, The Oregon State Agricultural College has established a course in pharmacy and chemistry that meets with the hearty approval of this Board, inasmuch as it offers a large proportion of practical work; therefore, be it

Resolved, That the Oregon State Board of Pharmacy acting in accordance with Sections 5 and 6 of the Oregon Pharmacy Law as amended, grant to students of the Oregon Agricultural College, who complete the full course and hold a diploma from said institution, after they shall have been subjected to such examination, at Corvallis, Oregon, as this Board may approve, on the completion of the senior year, a certificate to act as a registered pharmacist in this state.

Provided, That any student who may have taken the last two years of the course only and who does not hold the regular diploma from the said institution, on passing the examination aforesaid shall only be granted the certificate of a registered assistant.

The training in the pharmaceutical course is largely conducted in the laboratory for it is only by this means that the student can form an intimate personal acquaintance with the material and the best methods of manipulation. Thus it is that he receives systematic practice in dispensing, in the examination of drugs as to identity, purity, and strength, and in the manufacture of various preparations from crude drugs. The requirements of the U. S. Pharmacopœia are always kept in mind, and the student is always held strictly responsible for the purity of his preparations and the accuracy of his work. The course aims to teach students facts and principles of immediate use in the drug store, adapting the work to the needs of the practical pharmacist and manufacturing chemist. It is, however, further recognized that a thorough foundation must be laid for this work, and in view of this, two years of preparatory

work are required in the college, or its equivalent in some other school. Students who have had equivalent work elsewhere can complete the course in pharmacy in two years.

EXPENSES.

Neither tuition nor incidental fees are charged at this institution, but to cover the cost of material used and wasted iu the laboratories a small laboratory fee and a deposit for breakage will be charged in the chemical and pharmaceutical laboratories as is the custom in allin stitutions. These fees are payable each term strictly in advance.

Chemical laboratory: Sophomore and junior years:

Material	$1.50
Deposit for breakage	1.50

Senior Year:

Material	$2.50
Deposit for breakage	1.00

Pharmaceutical Laboratory:

Material	$2.50
Deposit for breakage	1.00

Text-books in chemistry: Elements of Chemistry, Storer and Lindsay; Laboratory Manual, Shaw; Qualitative Analysis, Irish; Quantitative Analysis, Evans; Agricultural Chemistry, Johnson, and Station Bulletins.

For reference: Roscoe and Schorlemer, Fresenius, the Official Methods, and Johnson's How Crops Grow and How Crops Feed.

Text-books in pharmacy: United States Pharmacopœia; Handbook of Pharmacy, Coblentz; Materia Medica, Culbreth; Dose Book, Hoak; Medical Chemistry, Barclay; Quantitative Analysis, Sturmer and Vanderkleed.

Numerous reference books and trade journals are furnished by the college.

ENGLISH LANGUAGE AND LITERATURE.

J. B. HORNER, A. M., LIT. D., Professor.
IDA B. CALLAHAN, B. S., Assistant Professor.

Courses I and II.—*English Grammar.*—Freshman year; first and second terms. Review in parsing and analysis of sentences, five weeks. Oral and written exercises in sentence-making with special reference to the concord, government, and order of words, twenty weeks. All recitations in grammar to be accompanied with exercises in spelling. Five hours a week. Maxwell's Advanced English Grammar.

Course III.—*English Composition.*—Freshman year; third term. Sentence making with reference to clearness, force and elegance, six weeks. Capitalization, punctuation and letter-writing, four weeks. Five hours a week.

Throughout the freshman year the class work will be interspersed with short compositions to be corrected under the direction of the instructor. Also each term, the student will prepare a synopsis of a book written by an approved American author.

Freshmen found deficient in preparatory studies may at the discretion of their instructors be assigned to the sub-freshman class in order to make up such deficiency. Students before promotion from this course must be able to pass an examination in spelling and grammar equivalent to that required for a first-grade teacher's certificate.

Courses IV and V.—*Rhetoric.*—Sophomore year; first and second terms. The work of the two terms includes a study

of style, description, narration, exposition, argumentation and oratory. Four and five hours a week respectively.

The student before promotion from course five must be able to write good essays, orations, lectures and newspaper articles.

Course VI.—*English Literature.*—Sophomore year; third term. Caedmon to Shakespeare with special study of Chaucer, Spenser, Jonson, Bacon, and Shakespeare. Supplementary reading from the college library. Required at least one paper from each student a week. Five hours a week.

Course VII.—*English Literature.*—Junior year; first and second terms. The study of English literary masterpieces continued. This course is open to students in pharmacy and mechanical and electrical engineering the first term, and to students in agriculture and household science the second term. Five hours a week.

Course VIII.—*American Literature.*—Junior year; third term. A study of American authors with supplementary reading from the college library. At least two papers each week are required on the books read. This work is also elective during the third term, senior year in the agricultural and the mechanical and electrical engineering course.

MATHEMATICS AND ENGINEERING.

GORDON V. SKELTON, C. E., Professor.
CHARLES L. JOHNSON, B. S., Instructor.

The course in Mathematics includes such of its branches as the distinctive aims of this institution require, and conforms itself, in general, to that in use in the most successful agricultural colleges.

That the study may to the fullest extent strengthen and discipline the mind for connected, logical thought, thoroughness and accuracy are insisted upon at all times. In the class-room all principles aud demonstrations must be presented in an orderly and logical manner. The constant aim is to cultivate the powers of insight, judgment, and originality.

To meet existing conditions, it is necessary to so arrange the freshman mathematics, for the present, as to make it possible for students who come without preparation in algebra, but who are otherwise qualified, to enter the freshman class. To this end courses Ia, IIa and IIIa are offered. It is earnestly advised that students prepare themselves for the regular courses. In the main, the same work is accomplished in these as in the regular courses during the freshman year, but the student will have to work harder and will have less time for reviews and practice drills upon the principles.

Course I—*Algebra.*—Freshman year; first term. From simple indeterminate equations to ratio and proportion.

This course is open to students who have completed the sub-freshman work and to new students who can satisfy the department that they are prepared for the work. A review of about ten days will be devoted to the topics that precede simple indeterminate equations. Students unable to successfully pass this review will be required to drop back to course Ia. The subjects taught are those found in Wentworth's Higher Algebra which is used in all the freshman courses as a text. Five hours a week.

Course II—*Algebra.*—Freshman year; second term. From ratio and proportion to theory of numbers. This course is open to all students who have successfully passed course I. Five hours a week.

Course III—*Algebra.*—Freshman year; third term. From the theory of numbers on. This course is open to students who have had courses I or II or their equivalent. Five hours a week.

Courses Ia, IIa, IIIa.—The work in algebra will be divided into three parts which will be given respectively in the first, second and third terms of the freshman year under the conditions and to the students specified above. A satisfactory grade in any one course is necessary before pursuing the next higher. Students taking these courses must expect to devote a great amount of time to the work.

Course IV—*Plane Geometry.*—Sophomore year; first term. This course includes all that is found in the first four books of plane geometry in any standard text, as Phillips and Fisher's. Special emphasis is laid upon definitions and principles. Original demonstrations are given and much time is devoted to original theorems and problems and at all times proofs and demonstrations are freely criticised and discussed in the class-room. Five hours a week.

Course V—*Plane, Solid and Spherical Geometry.*—Sophomore year; third term. This course includes book V of plane geometry and all of solid and spherical geometry. Students must have had course IV before taking this. Phillips and Fisher's Plane and Solid Geometry. Five hours a week.

Course VI—*Trigonometry.*—Sophomore year; third term. Students must have had all the preceding courses before taking this. Only enough time is given to spherical trigonometry to enable the student to solve the spherical triangle. Much time is devoted to practical triangulation and measurements. The department is supplied with all the necessary instruments which the students use under the direction of the instructor. The college has two most carefully measured base-lines, one 640 feet and the other 1000 feet long, which are used in the triangulations. Five hours a week.

Course VII—*Plane Analytical Geometry.*—Junior year; first term. This work is required of all students taking the mechanical and electrical engineering courses. The work embraces the subjects treated in Nichols' Analytics, which is used as a text. Five hours a week.

Course VIII—*Differential Calculus.*—Junior year; second term. This course is required of the same students as is course VIII. Among the topics considered are differentiation and applications, evaluation of indeterminate forms, expansion of functions, Taylor's and Maclaurin's theorems, maxima and minima, points of inflection, curvature, change of independent variable, functions of two or more variables, asymptotes, curve tracing, etc. Five hours a week.

Course IX—*Integral Calculus.*—Junior year; third term. Among the topics considered are direct integration, definite integrals and applications, integration of rational fractions, integration by rationalization, integration by parts, integra-

tion of trigonometric forms, etc.; applications to finding the lengths and areas of curves, surfaces and volumes of solids of revolution, etc.; double and triple integration and applications. In this course as in course VIII, great stress is laid upon practical applications, and a large number of practical problems are solved. Five hours a week.

Course X—*Surveying*.—Junior year: third term. This course is open to students who have completed course VI. The greater part of the time is spent by the student in the field with the various instruments. He is required to make surveys from descriptions given him as well as to write descriptions from surveys made by himself. In all cases notes must be carefully kept and worked up in the office.

The engineering department is equipped with the necessary instruments, including a railroad compass, transit with solar attachment, plane-table, Y level, hand-level, rods, chains, tapes, etc.

Course XI.—*Astronomy*.—Senior year; third term. That this most elevating and refining subject may be open to a greater number of students, it will be confined to descriptive astronomy and may be taken by students who have completed courses I to V, inclusive. Much time will be devoted to uranography. Five hours a week.

Course XII.—*Agricultural Engineering*.—Senior year; third term. This course is open to students who have completed course X. Under this head will be given instruction in road location and construction, includiug consideration of various road materials; designing of highway bridges; inspection of existing structures; designing, locating and constructing agricultural drainage systems; laying out farm buildings, etc. Instruction given in the class-room will be applied wherever possible. Five hours a week.

ZOOLOGY.

A. B. CORDLEY, M. S., Professor.
F. M. MCELFRESH, B. S., Assistant.

The work in this department is designed to give the student that knowledge of biological laws which is to-day regarded as an essential part of a liberal education. It aims to create a growing interest in the study of our native birds, insects and other animals and their interrelations with one another, with native and cultivated plants and with rural life; to give a knowledge of the foundation facts of morphology and physiology on which depend many of the principles of scientific stock breeding and feeding, of veterinary science and of human physiology and hygiene; and above all from an educational standpoint, it aims to train the student's perceptive faculties, to teach him to see, to do and to reason from observed facts.

The laboratories of the department occupy two rooms on the third floor of the administration building. They are well supplied with necessary apparatus including compound and dissecting microscopes, camera lucidas, eyepiece and stage micrometers, an automatic microtome, dissecting sets, dry and steam sterilizers, incubators, reagent sets and numerous smaller articles, all of which are for the use of students.

For the purpose of illustration there are in addition to the general museum and the entomological collection, a set of the celebrated Leuchart zoological charts, enlarged dissectable models of the human ear, eye, heart, brain and larynx and a large series of microscopic mounts.

The general museum also contains a small but typical collection of mounted mammal skins; a collection of mounted skins of native birds; a collection of mounted bird skins from Alaska; a collection of more than one hundred species of eggs of native birds; a small collection of fishes and reptiles; a considerable number of marine invertebrates, including a small but beautiful collection of Philippine shells; a small but interesting collection of skulls and disarticulated and articulated skeletons; and the largest collection of Oregon insects in existence.

Course I.—*Invertebrate Zoology.*—Sophomore year; third term. A course devoted principally to the morphology, physiology and ecology of invertebrates. Particular attention is given to the study of the single celled forms since it is believed that the student can thus best gain an insight into the structure and physiological activities of the higher animals. Some of the types studied are the amœba, paramæcium, vorticella, sponge, hydra, starfish, crawfish, earthworm, mussel and grasshopper. Required in the courses in agriculture, household science and pharmacy. Seven hours a week. Laboratory deposit $3.00.

Course II.—*Entomology.*—Junior year; first term. A study of the structure, classification and habits of insects, with particular reference to those which are beneficial or injurious. Instruction is given in methods of collecting, mounting and studying the life-histories of insects and in the preparation and use of insecticides. Required in the courses in agriculture and household science. Prerequisite, course I. Seven hours a week. Laboratory deposit $1.00.

Course III.—*Vertebrate Zoology.*—Junior year; second term. A course devoted principally to the morphology and physiology of vertebrates. A careful comparative study is

made by dissections of several vertebrate types, particular attention being given to the Guinea pig as a type of the mammalia. The relation of function to structure is kept constantly in mind throughout the course which thereby becomes valuable as an introduction to the study of human physiology and veterinary science. Required in the courses in agriculture, household science and pharmacy. Seven hours a week. Prerequisite, course I. Laboratory deposit $3.00.

Course IV.—*Physiology.*—Junior year; third term. A course in human physiology designed for students having a knowledge of general biology and of vertebrate anatomy. The student should also possess some knowledge of chemistry and physics. Required in courses in agriculture, household science and pharmacy. Prerequisites, courses I and III. Five hours a week.

Course V.—*Physiology.*—Junior year; second term. A course in the elements of human anatomy and physiology designed for students with no previous biological training. Text-book, lectures and demonstrations. Martin's Human Body. Required in the course in mechanical engineering. Five hours a week.

Course VI.—(*a*) *Evolution.*—Senior year; first term. A course of lectures and collateral reading on organic evolution; covering such topics as the evolution of evolution, variation, struggle for existence, heredity, etc. Prerequisites, courses I and III. Two hours a week. Elective.

(*b*) *Systematic Zoology.*—A discussion of the principles of zoological classification with particular reference to species of economic importance. Prerequisites, courses I and III. Three hours a week. Elective.

(*c*) *Advanced Entomology.*—A laboratory study of some restricted group of insects, of some particular species of economic importance, or of the insects affecting some particular crop. In this course students have free access to the collections and the library and records of the experiment station. The course extends throughout the year. Prerequisites, courses I and II. Seven hours a week. Elective.

Course VII.—(*a*) *Histology.*—Senior year; second term. A course of laboratory practice in fixing, hardening, imbedding, sectioning, staining, mounting and studying the tissues of the higher animals. Prerequisites, courses I and III. Seven hours a week. Elective.

(*b*) *Advanced Entomology.*—A continuation of course VI *c*.

Course VIII.—(*a*) *Embryology.*—Senior year; third term. Mainly a laboratory course in the study of the development of the frog and the chick, supplemented by a study of the general facts and principles of embryology. Prerequisites, courses I, III and VII *a*. Seven hours a week. Elective.

(*b*) *Advanced Entomology.*—A continuation of courses VI *c* and VII *b*. Seven hours a week. Elective.

BOTANY AND HORTICULTURE.

E. R. LAKE, M. S., Professor.

BOTANY.

The aim of the regular course in botany is to give the student such a knowledge of plants as will enable him to intelligently consider the various problems of plant life on the farm, in the field, garden or forest.

The student is taught to observe plants; to become acquainted with them by actual work with them.

The chief features of the work of this department are laboratory and field exercises supplemented by lectures and recitations. Text and reference books are used merely as guides, or for the purpose of furnishing suggestions to the student that he may be enabled to make the field, garden, greenhouse and laboratory work the more effective. The department has a good working equipment for the courses outlined, consisting of an herbarium especially rich in Oregon plants, models, charts, mounted and unmounted plants of the various orders and classes, preserved specimens, and laboratory and field appliances for both regular and special work.

Course I.—*Plant Morphology.*—Freshman year; third term. Laboratory and field exercises, together with recitations. The gross structure of our common flowering plants is the main topic of the term's work, though incidentally germination, growth, fertilization and fructification are considered. Each student is required to collect, mount, label and

classify 25–50 of the common field plants, and 10–25 samples of seeds of native plants. Five hours a week. Laboratory deposit, $2.50. Gray's Lessons; Coulter's Plants.

Course II.—*Plant Histology.*—Sophomore year; first term. Laboratory work with the dissecting and compound microscopes. The exercises of this course cover the minute structure of the higher plants, together with a brief consideration of the lower forms of plant life. Seven hours a week. Laboratory deposit, $3.25. Barnes' Plant Life.

Course III.—*Plant Physiology.*—Junior year; first term. Laboratory exercises and recitations. The subject is considered with special reference to the needs of the agriculturist and horticulturist. The principal part of the discussion is given to those phases of the subject that bear directly upon our cultivated crops. Seven hours a week. Laboratory deposit, $3.00. Sorauer, Physiology of Plants; McDougal, Plant Physiology.

Course IV.—*Plant Pathology and Hygiene.*—Senior year; first term. Laboratory and field work supplemented by lectures and recitations. The common fungous foes of the cultivated field, orchard and garden crops, together with the means of prevention and remedy are considered at length. Elective. Seven hours a week. References, Lodeman, Weed and Massee.

Course V.—*Forestry.*—Senior year; second term. Forest trees, their care, culture and products. Forest areas and their type trees. Forest planting, preservation, and laws. Pacific Coast forests and their value as wealth producers. Timber trees and their diseases. Elective. Seven hours a week.

Course VI.—*Plant Products.*—Senior year; third term. Economic plants and their various preparations and uses.

History, development, and distribution of the plants that furnish the world with its chief supply of material for food, shelter, clothing, fuel, medicine and the arts. Elective. Seven hours a week.

Course VII.—*Systematic or Cryptogamic Botany.*—Senior year; third term. The work of this course is arranged to meet the needs of those electing it. In the systematic work, the student collects and classifies a hundred or more of the local plants, giving data as regards habitat, and distribution, and prepares a synopsis of the orders considered and species collected. Some time is also devoted to a study of current botanical literature.

In the cryptogamic work, the exercises are confined chiefly to a study of the comparative morphology of the fungi, algæ and other flowerless forms of plant life. Elective. Seven hours a week. Laboratory deposit, $3.50.

The laboratory deposit in courses I, II, III and IV are required of all students, and are made to cover possible loss and breakage of apparatus used by the individual student. At the close of each term such balance as may remain, (and with carefulness, that would be five-sixths of the deposit) is returned to the student. All deposits are required to be made in advance.

HORTICULTURE.

The work in horticulture is so arranged as to give the student a working knowledge of the principles and practices of modern horticulture, especially applicable to Pacific Coast conditions and requirements.

The experiment station orchard of over two thousand fruit trees, shrubs and vines furnishes ample material for all phases of the work of the several courses.

Course I.—*Plant Propagation.*—Senior year; first term. House and field exercises in seeding, grafting, cutting, layering and budding, together with recitations. Five hours a a week. Goff's Principles of Plant Culture.

Course II.—*Plant Culture.*—Senior year; second term. Lectures and recitations on orchard, garden and vineyard fruit crops, including selection of soils, planting, cultivating, pruning, harvesting, storing and marketing. Five hours a week. Bailey's Principles of Fruit Growing.

Course III.—(*a*) *Plant Evolution and Improvement.*—Senior year; third term. Lectures and recitations covering the various phases of evolution as bearing especially upon our cultivated plants, together with a discussion of the principles and practices of plant breeding and improvement by selection, and cross fertilization. Five hours a week. Bailey's Plant Breeding.

(*b*) *Landscape Gardening.* Lectures and recitations on the principles of home improvement, plants, their uses and abuses in adorning the grounds of city, suburban and country homes. Students are required to make plans for the improvement of some site selected, showing detail of buildings, walks, drives and the various plantings. Elective in the course in household science. Five hours a week.

ELOCUTION AND PHYSICAL CULTURE.

HELEN V. CRAWFORD, B. S., Professor.

ELOCUTION.

It is the design of this department to train the students to become intelligent and thoughtful readers. The individuality of the student is of the first importance. He is not made a slave to arbitrary rules, or allowed to become an imitator of his teacher; but he is taught to express his thoughts, convictions and emotions in accordance with his own temperament.

Courses I and II.—*Elocution.*—Freshman year; first and second terms. Analysis and rendering. Voice culture, physical culture. Two hours a week. Fulton and Trueblood.

Course III.—*Elocution.*—Sophomore year; first term. Voice culture, bodily expression, analysis and rendering. Two hours a week. Fulton and Trueblood.

Junior year.—Rhetorical exercises will be required throughout the junior year.

Courses IV, V and VI.—*Advanced Elocution.*—Senior year; first, second and third terms. Voice culture, rhythmic movements, literary analysis and rendering. Elective. Two hours a week. Fulton and Trueblood.

PHYSICAL CULTURE.

E. J. LEA, B. S., Instructor.

Physical training has recently been introduced into the college course as a regular drill for all lady students who are not physically disabled. As the gymnasium is not yet equipped with apparatus the class work is limited to the following exercises: Free movements, dumb-bells, clubs, fencing, bowling, and a variety of gymnastic games.

Course I.—*Physical Culture.*—Freshman year; first and second terms. Dumb-bells. This set of exercises is so designed that nearly all of the muscles of the body are brought into action. Free exercises and lively games are given as supplementary work.

Course II.—*Physical Culture.*—Sophomore year: first and second terms. Elementary clubs, supplemented with dumb-bells, free movements, gymnastic games, bowling, and the first principles of fencing.

Course III.—*Physical Culture.*—Junior year; second term. Elementary fencing, supplemented with free movements, bowling and gymnastic games.

FLORICULTURE AND GARDENING.

GEORGE COOTE, Professor.

Instruction in floriculture is given in the household science course. The student has the opportunity to familiarize himself with the methods of growing many varieties of decorative plants, and thus to become acquainted with their requirements as to temperature, soils and general cultivation.

Course I.—*Floriculture.*—Junior year; second term. Practical instruction is given in the best methods of plant propagation, potting and training.

In addition to the theoretical instruction in the class-room student also has the advantage of practical instruction the in the well equipped greenhouses of the college.

BACTERIOLOGY.

EMILE F. PERNOT, Bacteriologist.

Within the last decade bacteria have laid a very strong hold on the thought and imagination of the scientific world, and have come to be looked upon as playing a most important part, not only in the production of disease and in fermentation, but also in many everyday processes hitherto supposed to be dependent on very different causes.

In consequence of this, bacteriology has been raised to the dignity of a science, and its ramifications have become so numerous and wide-spreading that many of the other sciences, and even some of the arts, have been freely pressed into the service of one or the other of its branches.

The study of bacteriology has made great strides both in the pathological and the technical branches of the subject; and just as investigations into the physiology of higher plants gave the first impetus to the establishment of agricultural experiment stations in all countries; so, in like manner, the physiology of fermentation and technical bacteriology have called into existence, within the last few years, a number of stations and laboratories for the development of those branches of industry wherein microörganisms play an important part.

This station and college has a well equipped bacteriological laboratory for the investigation and study of bacteriological diseases, both animal and vegetable.

The following courses of lectures and laboratory work has

been added to the college curriculum as an elective study in the senior year.

Course I.—*Bacteriology.*—Senior year; first term. A course in the elements of bacteriology, including lectures, and laboratory practice in sterilizing, making culture media, inoculating and growing cultures, studying cultural characteristics of certain definite species of bacteria, mounting, staining and examining slides, classification.

Course II.—*Dairy Bacteriology.*—Senior year; second term. Study of the bacterial diseases of milk, bacteria in the dairy, study of bacteria in butter making, and in cheese making. Study of yeasts and ferments.

Course III.—*Bacteriology.*—Senior year; third term. Lectures and laboratory work in pathogenic germ diseases of stock and poultry; a study of vaccines, their manufacture and use; of the nitrifying bacteria in leguminous plants; of bacteria in the soil and the bacterial analysis of water.

MUSIC.

DOROTHEA NASH, B. H. E., Instructor.

The value of music as a factor in educational training is daily becoming more and more recognized. Not only does it develop the æsthetic side of our nature, and by its language imbue an increased love of the beautiful, but by the modern way of committing all kinds of music to memory proves a means of strengthening the mind and training the intellect, which is not to be surpassed by any of the older and more established methods.

The board of regents have added an instructor on the piano to the teaching staff for the benefit of those students who desire to add this study to the usual course.

The "Krause" method used is acknowledged to be one of the best of the modern German methods, which by the use of its scientific technique exercises and its methods of tone production overcomes and makes interesting and fascinating the difficulties of piano practice.

Public recitals are given by the pupils in the department as often as possible, such appearances being of great value to the music student.

A certificate is given to students finishing the required course with its given amount of practice. No set pieces are given to each pupil, but in addition to the standard studies used, compositions of the modern composers are chosen to suit the individual needs of the student.

A charge of 50 cents for a lesson of forty-five minutes is made, or $2.00 a month; no reduction for absences of which

no notice is given the teacher.. Each of the halls is furnished with a piano for practice.

An oratorio society has been organized in Corvallis, to which all students who sing will be made welcome.

The coming year the choral association will meet in Albany, bringing within reach of the students music which it is an education to hear and participate in.

Miss Nash, the instructor, has had four years' experience in teaching music and is now absent in London for further musical study.

The following is a programme played by pupils of the department:

1. (*a*) Adagio from Sonata C minor.....*Beethoven*
   (*b*) "Melodie" .....*Moszkowski*
2. Duett—Hungarian Dances Nos. 4 and 5.....*Brahms*
3. (*a*) Minuett—(*b*) Impromptn A*b*.....*Schubert*
4. Serenata.....*Moszkowski*
5. Sonata Pathetiqne, op. 13.....*Beethoven*
6. (*a*) Caprice, E minor.....*Mendelssohn*
   (*b*) La Fileuse.....*Raff*
   (*c*) Theme and Variations, B*b* .....*Schubert*
   (*d*) Valse, A*b*.....*Moszkowski*

FREE-HAND DRAWING.

DOROTHEA NASH, B. H. E., Instructor.

No branch of education is more elevating or important than that of free-hand drawing, in that it cultivates the power of observation and trains the eye and hand. It is also an important aid in the study of many other branches; its value is appreciated in after life in every business, in many industries, and professional pursuits.

In this school object drawing is taught, beginning with the first principles of perspective, gradually advancing the student to the higher branches of art, with the exception of painting, which is not taught.

Course I.—*Elementary Drawing.*—Freshman year; first term. A course in the first principles of drawing including practice exercises and lectures. Three hours a week.

Course II.—*Elementary Drawing.*—Freshman year; second term. A course in drawing from simple objects. Three hours a week.

Course III.—*Elementary Drawing.*—Freshman year; third term. A continuation of course II. Students in the mechanical and electrical engineering course draw principally from mechanical subjects; those in the other courses, from casts and natural objects. Three hours a week.

Courses IV, V and VI.—*Advanced Drawing.*—Senior year. Advanced free-hand drawing including sketching from nature, is offered as an elective throughout the senior year. Five hours a week.

MILITARY.

MAJOR F. E. EDWARDS, Commandant.

The object of this department is so to instruct the cadet that upon graduation he will be thoroughly competent to hold a commission as a company officer in the national guard or volunteer army. Military drill improves the habits and manners of the student, develops him physically and gives him that military knowledge which it is desirable every citizen should possess that he may render intelligent aid to his country or state in time of need. It cultivates a manly spirit, ready and implicit obedience, respect for authority and self-restraint—all qualities of inestimable value to a young man.

Instruction in the course is prescribed for all undergraduate male students. Those who are physically unable to drill will be excused from regular duty upon the presentation of a disability certificate signed by a known physician. Such students may be assigned some light duty by the head of the department. The instruction is both practical and theoretical.

The battalion band, with twenty instruments, is under the instruction of a competent cadet officer as leader. Cadets of the band who wish to furnish their own instruments will receive a reasonable rental for the same from the college. Ordinarily no cadet will be assigned to the band until he is well instructed in the "school of the soldier" and the "school of the company."

The armory contains a drill room 70x120 feet in extent, an office and recitation room, and suitable rooms for storing

guns and other ordnance. Two hundred Springfield cadet rifles with equipments, two light artillery field pieces, and a liberal allowance of blank and ball cartridges are furnished by the ordnance department, U. S. army. The college has purchased the necessary band instruments, swords, bugles, colors, and signal apparatus for the thorough equipment of the department.

It is the intention to hold an encampment for two or three days annually if suitable camp equipage can be secured. The first annual encampment was held early in June, 1900.

The commissioned officers are selected from the senior class, the non-commissioned officers from the senior, junior and sophomore classes. Appointment of officers and non-commissioned officers, and their relative rank, is determined according to the military standing of cadets based upon a careful consideration of the following points: (1) Knowledge of drill and duties as determined by examination, practical application and recommendations of superior officers; (2) zeal, soldierly bearing and aptitude for command; (3) character; (4) military record; (5) general standing in the college.

All cadets are required to wear a uniform at all drills and other military exercises. This uniform costs about $16.50. It is of dark blue cloth of an excellent quality and makes a very neat and serviceable school suit.

Course I.—*Military Drill.*—Freshman, sophomore, junior and senior years. The practical course in infantry includes the schools of the soldier, company and battalion, in close and extended order; ceremonies; guard and outpost duty; target practice and battle tactics. In artillery it includes the schools of the soldier, cannoneer and platoon, dismount-

ed; the mechanism, nomenclature and care of the 3.2 inch breech-loading field piece; the use of artillery in the field.

Those physically unable to bear arms, together with a limited number from the senior and junior classmen, are assigned to the signal corps, and are instructed in the usual methods employed in military signaling.

Course II.—*Military Science.*—Junior and senior years. The theoretical course embraces recitations in U. S. infantry and light artillery drill regulations, and outpost and guard duty manuals; instruction in reports and returns pertaining to a company; lectures on organization and administration of the U. S. army in peace and war; the volunteers and militia; tactics, strategy and logistics, and other military subjects.

U. S. Infantry Drill Regulations, Blunt's Small Arms Firing Regulations, U. S. Light Artillery Drill Regulations, Gidding's Manual of Signaling, Burnham's Duties of Outposts and Manual Guard Duty, Wagner's Elements of Military Science.

ROSTER.

STAFF AND NON-COMMISSIONED STAFF.

C. A. Saunders.....First Lieutenant and Adjutant
M. C. Williams.....Sergeant Major
A. Leavens.....Quartermaster Sergeant
E. Clark.....Chief Trumpeter

COLORS.

H. E. Junkin.....Color Sergeant
F. N. Stump.....Color Corporal
E. Dyer.....Color Corporal

SIGNAL CORPS.

W. R. Dilley.....Second Lieutenant and Signal Officer
H. Davis.....Signal Sergeant
C. Chipman.....Signal Corporal
C. Griffith.....Signal Corporal

BAND.

T. E. Palmer.....First Lieutenant and Leader
M. Dukes.....Drum Major

SERGEANTS.

G. Winslow, F. Kruse. J. G. Garrow, E. W. Redd, F. Colvig.

CORPORALS.

C. A. Riddle. J. Wiley, R. Henkle, S. Harris.

THE LINE.

"A" COMPANY.	"B" COMPANY.	"C" COMPANY.
Captain:	*Captain:*	*Captain:*
R. D. Burgess.	J. G. Elgin.	J. C. McCaustland.
Lieutenants:	*Lieutenants:*	*Lieutenants:*
F. C. Walters.	H. E. Buxton,	E. B. Aldrich.
A. H. Frazier.	A. J. Bier.	H. E. Penland.
Sergeants:	*Sergeants:*	*Sergeants:*
A. L. Yoder,	A. Campbell,	W. W. Garrow.
T. P. West,	J. E. McBride,	S. Herbert,
M. Moore.	W. L. Sharp.	E. R. Shepard,
D. R. Barclay,	M. F. Bridgess.	F. Ward.
C. F. Hawley.	R. M. Withycombe.	I. Brown.
Corporals:	*Corporals:*	*Corporals:*
W. L. Pate.	E. Tulley.	J. F. Scott.
J. E. Smith.	L. Kraps.	R. Goodrich.
F. C. Stevens.	C. Laughlin.	W. B. Hillman.
F. Steiwer.	W. S. Junkin.	W. E. Hanley.
L. Millhollen.	T. Bilyeu.	H. Tarter,
L. E. Kurtichanof.	L. Johnson.	J. W. Hartley.
Bugler:	*Bugler:*	*Bugler:*
H. G. Humphreys.	W. H. Flint.	E. W. Yates.

THE EXPERIMENT STATION.

The station bears an important relation to the college, as the scientific investigations conducted at the station strongly support the instruction given in the class-room. Aside from the original investigations of an economic significance to agriculture, the work of the station affords daily object lessons in good modern farming.

About one hundred acres of the college farm are devoted to scientific and experimental farming. Animal husbandry is an important feature of station work. For this branch of the work Shorthorn and Jersey cattle, Cotswold and Shropshire sheep, and Berkshire swine are maintained. Among these, animals can be found of rare individual excellence, thus offering to the student in agriculture an opportunity to study the highest types of the respective breeds.

Extensive field trials are made in the growing of many varieties of cereals, grasses and forage plants, which are utilized in various feeding experiments conducted for the purpose of determining their value as stock foods. This work embraces the study of plant environment and the correlated subject of animal nutrition, thus supporting in a practical manner the science of agriculture as taught in the college.

Dairying is also a prominent feature of the station work. For this purpose a herd of typical dairy cows and a well equipped creamery are maintained. Many problems of vital interest to practical dairymen are constantly being worked out along the lines of rations for cows and methods for handling the herd. The student himself frequently assists in the work and thus obtains tangible evidence of the practical utility of the sciences in dairy husbandry.

The horticultural work of the station affords the student an admirable opportunity for comparing the work of the class room with the practices of the field. Plant breeding, cross pollination of fruits, as well as modern methods of planting, pruning, grafting, spraying and cultivation are all brought immediately under the observation of the student, thus affording him an excellent opportunity to become thoroughly conversant with the science and practice of horticulture.

SHORT COURSE.

This course is designed to meet the requirements of a large number of men and women in the state who have not the time or the means to take a full college course, and yet are desirous of obtaining a better equipment for their life-work than they now possess.

The course is given in the winter, for at this season the time can be better spared from the farm and orchard than at any other period. While the time will be subject to change to fit the regular college work, yet the course will be arranged to begin about the second week in January of each year, and extend over a period of from four to six weeks.

No special preparation is necessary as the instruction will be given by lectures and laboratory work. No examination is required to enter the course and no textbooks are used. It is the aim of this course to give to the student the largest possible amount of practical information regarding the various phases of agriculture and horticulture. Special attention is given to practical dairying.

The institution is well equipped for work in these lines. Laboratories, dairy building, green houses, and farm, all afford efficient means for illustration and work.

In addition to the course outlined, there are provided special lectures by practical men who have achieved success in some particular branch of agriculture or horticulture, or some other important industry of the state . These special lectures are provided without extra cost to the student, and are highly instructive and beneficial.

No tuition fee will be charged in this course. Those who attend will be expected to secure boarding places in the city or in the boarding halls of the college, provided the latter are not fully occupied by regular college students.

Reduced fare on all railroads in the state will be secured for those who attend this course.

For further information regarding this course application should be made to the president of the institution, or to the vice-director.

FARMERS' INSTITUTES.

One of the most useful methods of diffusing agricultural education is the farmers' institute. These institutes are especially helpful both to the farmer and the experiment station worker. The former secures scientific information upon topics of immediate interest to him and is instructed in its practical application to the farm; while the latter is brought to realize more vividly the needs and perplexities of the farmer. It is gratifying to note the growing demand for more of these institutes, and while the station is ever ready to accede to these demands, it is, however, becoming annually more difficult on the part of the station officials to fulfill these obligations, owing to the constant increase in the work of the station.

During the past year, twelve institutes were held in various sections throughout the state under the auspices of the station, with a total attendance of about 1,600.

LIBRARY.

The library occupies a large, well-lighted room on the first floor of the administration building, and contains nearly 3000 bound volumes of standard works on history, literature, arts, sciences, general subjects and fiction; as many more bound volumes of U. S. government publications and about 5000 pamphlets and bulletins. Care has been exercised in the selection of books in order that each department may have proper works of reference at the disposal of the student.

A card catalogue is used and the books are indexed according to subject by the decimal system, and alphabetically according to title and author, so that the use of the library is greatly facilitated and its resources upon any subject easily ascertained.

The library receives the leading literary and scientific magazines and journals, all of which are kept on file.

The library is open for the issuing of books every school-day from 8 a. m. to 5 p. m., and during that time the librarian is in constant attendance. Books, excepting cyclopedias and works of general reference, may be drawn out by students for a period not exceeding two weeks.

LIST OF STUDENTS.

GRADUATES.

NAMES.	DEGREE.	POSTOFFICE.	COUNTY.
Beach, Wm. H.....	B. S.	Oregon City.....	Clackamas.
Burnette, Minnie	B. H. S.	Corvallis	Benton.
Cauthorn, Franke J.....	B. H. S.	Corvallis	Benton.
Denman, Anna M...	B. L.	Corvallis	Benton.
Finley, Edna.....	B. H. E.	Corvallis	Benton.
Gatch, Grace	A. B.	Corvallis	Benton.
Groves, Mary Edna	B. S.	Corvallis.....	Benton.
Huffman, Jesse F...	B. S.	Philomath.....	Benton.
Jones, Mary.....	B. H. S.	Corvallis	Benton.
Jones, Thomas A.....	B. S.	Nome City, Alaska.	
Kidder, Alice J.....	B. H. S.	Corvallis.....	Benton.
Kyle, Ena.....	B. H. S.	Corvallis.....	Benton.
Lea, Erwin J.....	B. S.	Corvallis	Benton.
McBride, Idella Florence	B. H. S.	Shedd.....	Linn.
Murray, L. W.....	B. S.	Corvallis	Benton.
Nash, Dorothea.....	B. H. E.	Corvallis	Benton.
Small, Chas. E.....	B. M. E.	Corvallis	Benton.
Smith, Nolan R.....	B. S.	Dallas	Polk.
Stimpson, A. J.....	B. S.	Corvallis	Benton.
Woodcock, A. R	B. S.	Corvallis	Benton.

SENIORS.

NAMES.	COURSE.	POSTOFFICE.	COUNTY.
Abrams, W. Carle.....	Mech.	Lincoln.....	Polk.
Aldrich, E. B.....	Agri.	Woodstock	Multnomah.
Bier, Arthur J.....	Mech.	Corvallis	Benton.
Burgess, R. D.....	Agri.	Marshfield	Coos.
Buxton, Harry E.....	Elec.	Corvallis	Benton.
Buxton, Minnie.....	H. S.	Corvallis	Benton.
Dilly, W. R.....	Agri.	Wren	Benton.
Elgin, J. Grant	Agri.	Corvallis	Benton.
Frazier, A. H.....	Mech.	Sheridan	Yamhill.
Fuller, Inez.....	H. S.	Corvallis	Benton.
Gallagher, J. H.....	Elec.	North Yamhill.	Yamhill.
Garrow, J. G.....	Mech.	Parkplace	Clackamas.
Garrow, W. W.....	Mech.	Parkplace	Clackamas.
Harris, Scott E.....	Phar.	Elgin	Union.
Hershner, Joyce.....	H. S.	Corvallis	Benton.

Hill, Garlin	H. S.	Independence	Polk.
Jackson, Dora	H. S.	Corvallis	Benton.
Junkin, H. E	Elec.	Corvallis	Benton.
Kruse, Fred	Elec.	Marshfield	Coos.
Leavens, Aubert	Mech.	Cascade Locks	Wasco.
Maxfield, Florence	H. S.	Suver	Polk.
McBride, J. E	Mech.	Shedd	Linn.
McCaustland, J. C	Elec.	Corvallis	Benton.
Noel, Leigh	Mech.	Santa Paula	California.
Ownbey, Letia	H. S.	Oregon City	Clackamas.
Palmer, T. E	Elec.	Grants Pass	Josephine.
Penland, H. E	Agri.	Albany	Benton.
Ranney, Lillie	H. S.	Corvallis	Benton.
Rueter, Elsie	H. S.	Forest Grove	Washington.
Saunders, C. Alfred	Mech.	Empire	Coos.
Smith, Etta	H. S.	Corvallis	Benton.
Smith, F. W	Mech.	Parkplace	Clackamas.
Starr, M. Eva	H. S.	Corvallis	Benton.
Walters, F. C	Mech.	Monroe	Benton.
West, Theo. P	Mech.	Clatsop	Clatsop.
Winslow, Glenn.	Agri.	Newberg	Yamhill.

JUNIORS.

NAMES.	COURSE.	POSTOFFICE.	COUNTY.
Burton, Ivy	H. S.	Independence	Polk.
Campbell, Etta	H. S.	Ballston.	Polk.
Garrow, Edna	H. S.	Corvallis	Benton.
Hillman, Ethelwyn	H. S.	Corvallis.	Benton.
Hoover, Lizzie	H. S.	Fossil	Wheeler.
Hoover, Maude	H. S.	Fossil	Wheeler.
Jones, Mabel L	H. S.	Brooks	Marion.
Kyle, Ethel	H. S.	Corvallis	Benton.
Michael, Bessie	H. S.	Corvallis	Benton.
Riddle, Blanche	H. S.	Riddle	Douglas.
Rusk, Imogen E	H. S.	Milwaukie	Clackamas.
Smith, Bessie	H. S.	Salem	Marion.
Wilson, Flora	H. S.	Canyonville	Douglas.
Withycombe, Mabel.	H. S.	Corvallis	Benton.
Colvig, Fred L	Phar.	Grants Pass	Josephine.
Davis, Mabel	Phar.	Corvallis	Benton.
Holden, Blanche	Phar.	Oregon City	Clackamas.
Reid, Mrs. Esther	Phar.	Corvallis	Benton.
Stalker, John L	Phar.	Carson	Union.
Ward, Frank A	Phar.	Plainview	Linn.
Williams, M. C	Phar.	Airlie	Polk.
Brown, Ivan	Agri.	Hockinson	Wash. State.

Junkin, W. S	Agri.	Corvallis	Benton.
Moore, Mountain	Agri.	Express	Baker.
Withycombe, Robert	Agri.	Corvallis	Benton.
Bridgess, M. F	Mech.	Hillsboro	Washington.
Campbell, Alfred	Mech.	Ballston	Polk.
Chipman, Clarence B	Mech.	Corvallis	Benton.
Davis, Harry	Mech.	Corvallis	Benton.
Dyer, Edward L	Mech.	Albany	Linn.
Hawley, C. F	Mech.	Wildwood	Lane.
Herbert, Stanley D	Mech.	Corvallis	Benton.
Kraps, Leo	Mech.	Salem	Marion.
Pate, W. L	Mech.	Jefferson	Marion.
Scott, J. F	Mech.	Tangent	Linn.
Scott, William B	Mech.	Milwaukie	Clackamas.
Sharp, W. L	Mech.	Corvallis	Benton.
Shepard, E. R	Mech.	Zena	Polk.
Wiley, John	Mech.	Myrtle Creek	Douglas.
Yoder, Aaron L	Mech.	Needy	Clackamas.

SOPHOMORES.

NAMES.	COURSE.	POSTOFFICE.	COUNTY.
Abbe, Mabel	H. S.	Summit	Benton.
Allen, Ina Pearl	H. S.	Amity	Yamhill.
Applegate, Rachel L	H. S.	Yoncalla	Douglas.
Belknap, Frances E	H. S.	Corvallis	Benton.
Danneman, Carrie	H. S.	Clem	Gilliam.
Ewing, Gertrude	H. S.	Fulton	Multnomah.
Garret, Rena	H. S.	Corvallis	Benton.
Herbert, Myrtle	H. S.	Corvallis	Benton.
Hodgin, Dora	H. S.	Independence	Polk.
James, Julia	H. S.	Suver	Polk.
Jones, Katharine	H. S.	Independence	Polk.
Mattley, Maud	H. S.	Corvallis	Benton.
Michael, Grace	H. S.	Corvallis	Benton.
Miner, Christal	H. S.	Corvallis	Benton.
Parsons, Stella	H. S.	Albany	Linn.
Shelton, Pearl	H. S.	Arlington	Gilliam.
Small, Linnie	H. S.	Silver Lake	Lake.
Smith, Ethel	H. S.	Salem	Marion.
Smith, Kittie	H. S.	Gervais	Marion.
Steiwer, Helen	H. S.	Jefferson	Marion.
St. Germain, Elizabeth	H. S.	Corvallis	Benton.
Thompson, Orla	H. S.	Pratum	Marion.
Wittschen, Virgene	H. S.	Turner	Marion.
Cockrell, M. J	Phar.	Corvallis	Benton.
Harding, G. L	Phar.	Oregon City	Clackamas.
Hartley, Jas. W	Phar.	Lorane	Lane.

Holland, V. Constance...	Phar.	Salem.....	Marion.
Humphreys, Lester W....	Phar.	Canyonville	Douglas.
McGillivray, A. E	Phar.	Shaw	Marion.
Millhollen, L. F	Phar.	Oakville	Linn.
Morrison, W. J.....	Phar.	Oakville.....	Linn.
Redd, E. W.....	Phar.	Carlton	Yamhill.
Sturgeon, Maude...	Phar.	Tillamook.....	Tillamook.
Weber, Eugene.....	Phar.	Corvallis...	Benton.
Barclay, Ross.....	Agri.	Monroe.....	Benton.
Barnhart, Ray.....	Agri.	Corvallis	Benton.
Gallagher, F. R.....	Agri.	North Yamhill.	Yamhill.
Goodrich, Ray.....	Agri.	North Yamhill.	Yamhill.
Hanley, W. E.....	Agri.	Hillsboro.....	Washington.
Horner, Chas. H.....	Agri.	Salem	Marion.
Houston, Fred C.....	Agri.	Mohawk.....	Lane.
Shepard, R. C.....	Agri.	Zena	Polk.
Smith, John E.....	Agri.	Amity	Polk.
Smith, Minnie G.....	Agri.	Latourelle.....	Multnomah.
Stephens, F. C.....	Agri.	Corvallis.....	Benton.
Tarter, Herman V.....	Agri.	Corvallis.	Benton.
Tedrow, E. A.....	Agri.	Monmouth	Polk.
Tully, Edgar.....	Agri.	Wallowa.....	Wallowa.
Van Groos, William.....	Agri.	Corvallis	Benton.
Alspaugh, A. M.....	Mech.	Eagle Creek	Clackamas.
Archibald, Robert C.....	Mech.	Tangent.....	Linn.
Baxter, Elmer	Mech.	Dayton.....	Yamhill.
Bilyeu, Thomas.....	Mech.	Athena	Umatilla.
Bruce, Bert W.....	Mech.	Turner	Marion.
Fruit, D. A	Mech.	Peoria.....	Linn.
Griffith, Carl	Mech.	Clymer.....	Marion.
Hillman, W. B.....	Mech.	Corvallis	Benton.
Jackson, E. P.....	Mech.	Cleone.....	Multnomah.
Johnson, Luther	Mech.	Portland	Multnomah.
Kurtichanof, L E.....	Mech.	Chitwood.....	Lincoln.
Lane, Ralph.....	Mech.	Corvallis	Benton.
Lanka, Robert.....	Mech.	Grade	Wheeler.
Laughlin, Chester W.....	Mech.	North Yamhill.	Yamhill.
Leadbetter, N. W.....	Mech.	Corvallis.....	Benton.
Lusted, Harry	Mech.	Troutdale.....	Multnomah.
Martin, Harold.....	Mech.	Corvallis.....	Benton.
Mattley, L. G....	Mech.	Corvallis	Benton.
McTimmonds, Fred.....	Mech.	Dallas.....	Polk.
Riddle, Claude.....	Mech.	Riddle	Douglas.
Starr, Artie.....	Mech.	Monroe.....	Benton.
Steiwer, Fred.....	Mech.	Jefferson.....	Marion.
Thurston, Sam.....	Mech.	Suver	Polk.
Underwood, Irving M.....	Mech.	Sherar's Bridge.	Sherman.
Wilson, Bush	Mech.	Corvallis	Benton.

FRESHMEN.

NAME.	COURSE.	POSTOFFICE.	COUNTY.
Anderson, Clauda	H. S.	Corvallis	Linn.
Baldwin, Edith	H. S.	Corvallis	Benton.
Barclay, Gertrude	H. S.	Monroe	Benton.
Berthold, Edith J	H. S.	Corvallis	Linn.
Blakeslee, Clara	H. S.	Corvallis	Benton.
Canfield, Elsie M	H. S.	La Fayette	Yamhill.
Chipman, Laura	H. S.	Corvallis	Benton.
Chipman, Rosamond	H. S.	Corvallis	Benton.
Crawford, Clara C	H. S.	Elk City	Lincoln.
Cummings, Sibyl	H. S.	Shaw	Marion.
Cunningham, Wavelle	H. S.	Arlington	Gilliam.
Dixon, Sadie	H. S.	Corvallis	Benton.
Ellis, Grace	H. S.	Corvallis	Benton.
Finley, Ada	H. S.	Corvallis	Benton.
Gallagher, Lizzie A	H. S.	North Yamhill	Yamhill.
Harden, Beulah	H. S.	Corvallis	Benton.
Hibbs, Edna M	H. S.	Gaston	Washington.
Hibbs, Mamie H	H. S.	Gaston	Washington.
Horning, Odalite	H. S.	Silver Lake	Lake.
Horton, Alice	H. S.	Monroe	Benton.
Howard, Edith	H. S.	Prineville	Crook.
Ingram, Rose	H. S.	Monroe	Benton.
Johnson, Lillian	H. S.	Vale	Malheur.
Johnson, Viola	H. S.	Vale	Malheur.
Looney, Marguerite	H. S.	Jefferson	Marion.
McGillivray, Eliza	H. S.	Shaw	Marion.
McGillivray, Lena	H. S.	Shaw	Marion.
Miller, Nora	H. S.	Corvallis	Benton.
Miner, Christie	H. S.	Corvallis	Benton.
LaFrance, Fay	H. S.	Hood River	Wasco.
Linville, Ethel E	H. S.	Corvallis	Benton.
Michael, Effie	H. S.	Corvallis	Benton.
Olson, Kathryn	H. S.	Catlin	State of Wash.
Rusk, Leena	H. S.	Milwaukie	Clackamas.
Rycraft, Mildred	H. S.	Alsea	Benton.
Smith, Ida May	H. S.	Zena	Polk.
Smith, Mae	H. S.	Zena	Polk.
Smith, Nellie B	H. S.	Zena	Polk.
Smith, Robena	H. S.	Corvallis	Benton.
Starr, M. Elva	H. S.	Corvallis	Benton.
Starr, Mamie	H. S.	Monroe	Benton.
St. Germain, Inez	H. S.	Corvallis	Benton.
Stites, Daisy M	H. S.	Williams	Josephine.
Tarter, Lena Belle	H. S.	Corvallis	Benton.

Weber, Agnes	H. S.	Corvallis	Benton.
Winniford, Florence E	H. S.	Wren	Benton.
Winniford, Mary E	H. S.	Wren	Benton.
Wyatt. Minnie	H. S.	Corvallis	Benton.
Belt. Harold	Phar.	Corvallis	Benton.
Daniel, Lulu B	Phar.	Corvallis	Benton.
Dempsey, Fred	Phar.	Portland	Multnomah.
Dupuy, Harry E	Phar.	La Fayette	Yamhill.
Hamilton, Ira P	Phar.	Salem	Marion.
Healy, Bert	Phar.	Corvallis	Benton.
Humphreys, Harvey G	Phar.	Hillsboro	Washington
Humphreys, John A	Phar.	Canyonville	Douglas.
Irvine, Edna	Phar.	Corvallis	Benton.
Kinney, Albert	Phar.	Astoria	Clatsop.
Locke, Elsie	Phar.	Corvallis	Benton.
Maxfield, Roy	Phar.	Corvallis	Benton.
Mayfield, Byram	Phar.	Elgin	Union.
Randall, Julia	Phar.	Corvallis	Benton.
Rosendorf, Edward	Phar.	Independence	Polk.
Sheasgreen, Harriett A	Phar.	Corvallis	Benton.
Simpson, Merle	Phar.	Corvallis	Benton.
Spencer, Victor	Phar.	Corvallis	Benton.
Standlee, John B	Phar.	Corvallis	Benton.
Thompson, Edith	Phar.	Corvallis	Benton.
Tuttle, Gerald	Phar.	Summerville	Union.
Wells, Walter	Phar.	Corvallis	Benton.
Williams, Opal	Phar.	Junction City	Lane.
Wills, Bert G	Phar.	Hillsboro	Washington.
Witzel, Curtis C	Phar.	Turner	Marion.
Witzel, Dolph	Phar.	Turner	Marion.
Woods, J. M	Phar.	Corvallis	Benton.
Bellinger, Bruce M	Agri.	Woodstock	Multnomah.
Billings, Ralph	Agri.	Ashland	Jackson.
Buchanan, Claude	Agri.	Corvallis	Benton.
Carnahan, Frank	Agri.	Astoria	Clatsop.
Elgin, Ben	Agri.	Corvallis	Benton.
Fletcher, William R	Agri.	Vancouver	State of Wash.
Gearhart, J. Neal	Agri.	Astoria	Clatsop.
Gerking, A. D	Agri.	Corvallis	Benton.
Harder, Ralph	Agri.	Melville	Clatsop.
Jensen, Claude	Agri.	Gaston	Washington.
Johnson, J. Edwin	Agri.	Vale	Malheur.
Junkin, James B	Agri.	Corvallis	Benton.
Kissling, Jake P	Agri.	Pratum	Marion.
Luttrell, Roy S	Agri.	Myrtle Point	Coos.
McLaughlin, Earl	Agri.	Milwaukie	Clackamas.
Robinson, C. C	Agri.	Junction City	Lane.
Thompson, G. H	Agri.	Pratum	Marion.

Westenhiser, Fred	Agri.	Yoncalla	Douglas.
Whitney, Ira P.	Agri.	Chitwood	Lincoln.
Wicks, Wm. H.	Agri.	Corvallis	Benton.
Winniford, Walter	Agri.	Wren	Benton.
Yates, Bert	Agri.	Corvallis	Benton.
Yates, Wilber	Agri.	Corvallis	Linn.
Abrams, Chester	Mech.	Lincoln	Polk.
Barnhart, Charles	Mech.	Corvallis	Benton.
Bartmess, E. K	Mech.	Hood River	Wasco.
Bartmess, M. W.	Mech.	Hood River	Wasco.
Beaty, Edward	Mech.	Ballston	Polk.
Beaver, C. W	Mech.	Salem	Marion.
Bogue, Floyd	Mech.	Corvallis	Benton.
Clark, Elwood	Mech.	Corvallis	Benton.
Danilson, Frank	Mech.	Ontario	Malheur.
Davidson, Barton	Mech.	Hood River	Wasco.
Derby, Arthur N.	Mech.	Salem	Marion.
Dukes, Maltie	Mech.	Hood River	Wasco.
Evans, H. B.	Mech.	Estrup	Lane.
Fischer, Fred	Mech.	Corvallis	Benton.
Flint, William	Mech.	Woodburn	Marion.
Fox, Josiah	Mech.	Halsey	Linn.
Fry, Thomas	Mech.	Corvallis	Benton.
Gallogly, J. A	Mech.	Oregon City	Clackamas.
Gillette, Glenn	Mech.	Corvallis	Benton.
Glover, Walter G.	Mech.	Eagle Creek	Clackamas.
Greear, J. C.	Mech.	Hillsboro	Washington.
Harden, Delbert	Mech.	Corvallis	Benton.
Harding, C. B.	Mech.	Oregon City	Clackamas.
Harritt, Frank	Mech.	Salem	Marion.
Heston, Arthur C.	Mech.	Dundee	Yamhill.
Horton, John C.	Mech.	Monroe	Benton.
Howard, John	Mech.	Prineville	Crook.
Howard, Roy	Mech.	Prineville	Crook.
Hubler, John	Mech.	Corvallis	Benton.
Jamieson, Wm. D.	Mech.	Raleigh	Washington.
Lewis, Cecil H.	Mech.	Astoria	Clatsop.
Lieser, Herbert	Mech.	Vancouver	State of Wash.
McTimmonds, J. V.	Mech.	Dallas	Polk.
Osburn, Guy	Mech.	Corvallis	Benton.
Pate, Frank C.	Mech.	Jefferson	Marion.
Pugh, Harvey G.	Mech.	Shedd	Linn.
Rice, Geo. H	Mech.	The Dalles	Wasco.
Roake, Chester	Mech.	Oregon City	Clackamas.
Robinson, R. H.	Mech.	Junction	Lane.
Smith, R. W.	Mech.	Corvallis	Benton.
Tanner, Albert H.	Mech.	Mount Tabor	Multnomah.
Tharp, Zophar	Mech.	Bellevue	Yamhill.

Thrasher, Frank	Mech.	Corvallis	Benton.
Van Orsdel, John	Mech.	Dallas	Polk.
Williams, W. H	Mech.	Airlie	Polk.
Woodcock, C. H	Mech.	Corvallis	Benton.
Yates, Roy	Mech.	Corvallis	Linn.

SUB-FRESHMEN.

NAME.	POSTOFFICE.	COUNTY.
Adamson, A. W	Rowland	Linn.
Applegate, Eva	Yoncalla	Douglas.
Applegate, Evea	Yoncalla	Douglas.
Bamford, Frank	Junction City	Lane.
Bradley, Ruby	Corvallis	Benton.
Burgess, Myrtle	Sheridan	Yamhill.
Castle, Mac	Saginaw	Lane.
Cathey, Cecil C	Corvallis	Benton.
Cathey, Geo. A	Corvallis	Benton.
Cleek, W. M	Junction City	Lane.
Delaney, Jas.	Mountain Dale	Washington.
Dilley, Lucy A	Wren	Benton.
Freeman, Louis A	Eagle Creek	Clackamas.
Galbreath, Lottie	Tualatin	Washington.
Galbreath, Nettie	Tualatin	Washington.
Gellatly, David N.	Philomath	Benton.
Gordon, Frank	Glencoe	Washington.
Groshong, Fred M	Hoskins	Benton.
Hamilton, Lowry	Salem	Marion.
Hamilton, Wm	Crawfordsville	Linn.
Hess, Robert	Vale	Malheur.
Ingalls, Melville	Melville	Clatsop.
Jackson, Claude	Hillsboro	Washington.
Lithgow, Walter	Eugene	Lane.
Lyells, Edward	Vale	Malheur.
Mann, Smith	Roseburg	Douglas.
Maxwell, Seth	Arlington	Gilliam.
McArthur, F. J	New Era	Clackamas.
Milne, John	Hillsboro	Washington.
Morton, Reuben	Vale	Malheur.
Morton, Wm	Vale	Malheur.
Packer, Clyde	Portland	Multnomah.
Ramsey, Oliver P	Portland	Multnomah.
Stimpson, Hettie M	Newport	Lincoln.
Tedrow, Clarence	Monmouth	Polk.
Tohl, Herman	Nehalem	Tillamook.
Ward, Fred	Plainview	Linn.
Wells, Ivan	Vale	Malheur.
Whitaker, Margaret	Corvallis	Benton.

Whiteside, Clarence	Corvallis	Benton.
Wicklund, Elmer	Vale	Malheur.
Wilkes, Marion	Cornelius	Washington.

SPECIAL STUDENTS.

NAME.	POSTOFFICE.	COUNTY.
Alexander, Alice M.	Corvallis	Benton.
Alexander, Ethel M.	Corvallis	Benton.
Baber, Emma H.	Junction City	Lane.
Bickner, Mary A.	Oswego	Clackamas.
Bryson, Mrs. Mary	Corvallis	Benton.
Burnaugh, Lewie	Elgin	Union.
Burnett, Bruce	Corvallis	Benton.
Butcher, Emmet	Arlington	Gilliam.
Butcher, Harry	Custer City	South Dakota.
Clark, Jennie F.	Corvallis	Benton.
Cockrell, Mabel	Corvallis	Benton.
Crawford, Mamie	Corvallis	Benton.
De Armond, Richard S.	Grant's Pass	Josephine
Daniel, I. R.	Corvallis	Benton.
Elgin, Melvena	Corvallis	Benton.
Evans, W. R.	Portland	Multnomah.
Erwin, Cecil	Corvallis	Benton.
Fields, D. L	Philomath	Benton.
Goodnough, M. A	Corvallis	Benton.
Hall, Harley L.	Wells	Benton.
Harlan, Nettie	Corvallis	Benton.
Henkle, Raymond	Corvallis	Benton.
Jackson, Leona	Corvallis	Benton.
Jones, Ilda E.	Brooks	Marion.
Keady, Mabel	Corvallis	Benton.
Miner, Zelia	Corvallis	Benton.
Oleman, Ida	Corvallis	Benton.
Ranne, Belle	Corvallis	Benton.
Rickey, Ethel	Albany	Linn.
Rose, W. E.	Elgin	Union.
Scholl, David J.	Hubbard	Marion.
Shnck, Viola P.	Monitor	Marion.
Small, Belle	Silver Lake	Lake.
Smith, Cassius A.	Dallas	Polk.
Smith, Walter Floyd	Sublimity	Marion.
Spangler, Lulu	Corvallis	Benton.
Staats, Bertha A.	Airlie	Polk.
Stewart, Lenore	Corvallis	Benton.
Stewart, Ethel	Salem	Marion.
Strong, Harold W.	Corvallis	Benton.

Stump, Fred N.	Salem	Marion.
Thompson, Aura D.	Stafford	Clackamas.
Wellsher, Ceicle I.	Corvallis	Benton.
West, Paul H.	Warrenton	Clatsop.
Wilson, Teresa G.	Alsea	Benton.
Witzel, Herbert C.	Turner	Marion.
Wood, Homer S.	Arlington	Gilliam.
Zurcher, James D.	Enterprise	Wallowa.

RECAPITULATION.

Graduates	20
Seniors	36
Juniors	40
Sophomores	74
Freshmen	145
Sub-Freshmen	42
Specials	48
Total	405
Number of Counties in Oregon	33
Number of Counties represented	27

COMPARATIVE STATEMENT OF ENROLLMENT.

Year.	*Sub-Freshmen.*	*Preparatory.*	*Freshmen.*	*Sophomores.*	*Juniors*	*Seniors*	*Graduate Students.*	*Special.*	*Total.*
1888-1889		36	33	14	14	0	0	0	99
1889-1890		67	55	17	6	0	6	0	151
1890-1891		76	83	24	15	0	3	0	201
1891-1892		86	63	28	19	9	3	0	208
1892-1893		98	123	31	18	7	5	0	282
1893-1894		36	103	71	21	5	4	0	240
1894-1895		47	85	64	52	13	0	0	261
1895-1896		80	175	63	54	9	14	2	397
1896-1897			157	80	29	17	11	25	317
1897-1898			151	75	45	25	15	24	336
1898-1899			164	79	30	36	15	14	338
1899-1900	42		145	74	40	36	20	48	405

NOTE TO THE ALUMNI.

As announced in 1898, the catalogue for 1900–01 will contain a full list of the alumni and alumnæ of the Oregon Agricultural College. For the purpose of securing accuracy and to enable the committee to issue the next catalogue at an early date, all graduates of this institution are requested to notify the President or the Dean of the college of any change of residence or occupation.

It is desirable that all information of this kind be in possession of the officers above named not later than May 1, 1901.

LIST OF EXAMINERS.

The graduates of this institution, whose names appear below, have consented to conduct entrance examinations for applicants residing in their respective counties or districts:

Hon. J. K. Weatherford, Albany, Oregon.
Superintendent George Denman, for Benton County.
Austin T. Buxton, Forest Grove.
G. W. Palmer, Baker City.
William F. Keady, P. O. Box 818, Portland.
Effie Willis, Marshfield.
Lena Willis, Rosebnrg.
Arthur C. Lewis, Klamath Falls.
Rose Horton, Bridal Veil.
Prof. W. W. Bristow, McMinnville.
D. P. Adamson, Prineville.
Lyle Lawrence, Oregon City.

Pupils who have completed the state course of study and passed the required examination thereon according to the regulations prescribed by the state board of education for conducting uniform examinations for graduation, and evidenced by a diploma signed in accordance with such rules, will be admitted to the freshman year without further examination; provided, that such pupils must be at least fifteen years of age.

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