REPORT OF THE PRESIDENT

OF THE

SOUTH DAKOTA
AGRICULTURAL COLLEGE

AND THE

DIRECTOR

OF THE

Agricultural Experiment Station

FOR THE YEAR ENDING JUNE 30, 1901,

As Required by Act of Congress August 30, 1890.

1901:
Dutcher & Breed, Printers,
Brookings, S. D.
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REPORT.

To the Honorable Secretary of the Interior and the Secretary of Agriculture:

GENTLEMEN:

As required by Act of Congress of August 30th, 1890, I have the honor to submit you the annual report of the South Dakota Agricultural College for the year ended June 30th, 1901.

CONDITION AND PROGRESS OF THE INSTITUTION.

The condition of the College is encouraging. The attendance for the year exceeded anything in the history of the college, every department being crowded to its utmost capacity. While no radical changes have been made in the courses of study, they have been correlated more perfectly so as to ensure the student greater freedom of choice and at the same time sound and comprehensive training. The requirements for admission have been raised, particularly in mathematics. This gives the Freshman year more exclusively to elementary sciences which are necessary foundation studies for agriculture or other applied scientific knowledge.

DEGREES—The college offers but two baccalaureate degrees, Bachelor of Agriculture and Bachelor of Science. For either degree the student must complete in a satisfactory manner the work of one of the schemes mentioned in the following pages. These include not less than forty-three courses above the Sub-Freshman year. The degree of Master of Science may be conferred upon students who already hold the baccalaureate degree and who complete an additional amount of work equal to fourteen courses to be chosen from two departments, in each of which credit for six collegiate courses has already been obtained, the advanced work to be done as prescribed by the faculty. Eight of these courses, constituting the "major," must
be chosen from one department, and six courses, called the "minor," from the other. At least one year of this work must be done while in residence.

**Special Courses**—The college also offers special courses in several important and practical lines of work. These are mentioned in connection with the departments principally concerned and are as follows:

1. Two years' work in Pharmacy.
2. One year's work in Business branches.
3. One year's work in Amanuensis branches.
4. One year's work in Steam Engineering.
5. One year's work in Agriculture.
6. One term's work in Horticulture.
7. One term's work in Dairy Science.
8. One term's work in Domestic Science.
10. Special work in Art.

**Schemes of Study**—The work leading to a Bachelor's degree may be done according to one of three general schemes, called Groups A, B, and C. Through these the work of the college is adapted not only to different classes of students, but to individual students themselves. The entrance requirements to each of these groups is the work of the Sub-Freshman year.

In each scheme certain subjects, called required courses, must be taken by all students who follow that scheme; the remaining courses, called electives, can be selected by the students according to rules governing this choice.

Except in the case of Group C, which is designed for students in Pharmacy, nine elective courses are allowed, thus permitting the student to specialize during his last two years in college. In addition to these, the language work is largely elective, the student being allowed to choose between French, Latin or German, except in cases where his line of work makes one of them preferable to either of the others.

Before entering upon the duties of the Junior year, students should map out their work for the remaining two years in a manner satisfactory to the professors under whom elective work is to be taken. Heads of the departments and members
of the executive committee will give all possible assistance toward helping the students to make a proper selection of subjects.

**Electives**—The nine electives of Groups A and B must be chosen according to the following general rules:

No work ordinarily offered below the Sophomore year can be elected towards a degree. Where they deem it advisable, the faculty and heads of departments may impose special rules and restrictions governing the choice of electives. In no case shall the student be allowed to elect towards a degree more than three courses in industrial subjects such as cooking and shop-work, or exercises of a similar character, such as art and music; and these must be from the more advanced grades.

Five of the elective courses must be chosen along some one line of work, that in which the student wishes to specialize most, and shall constitute his "major." Three other courses must be chosen along some second line and shall be called his "minor." One general elective is allowed, which is intended to permit the student to bring up his prerequisites, or in some other way to contribute to his general scholarship, and should be selected with reference to those ends.

"Majors" may be chosen in the following departments: Agriculture, Horticulture, Botany, Chemistry, Zoology and Veterinary Medicine, Pharmacy, English, History and Economics, Mathematics, Physics, Mechanical and Electrical Engineering and Domestic Science.

Minors may be chosen in the same departments as majors, and also in Foreign Languages, Art and Music.

General electives may be chosen from those courses which are offered as major and minor subjects.

**Group A**—Those satisfactorily completing the work of this group will receive the degree of Bachelor of Science. The required courses include those subjects which have a general application in the understanding of agricultural processes, thus affording the student the opportunity of laying the foundation for a broad scientific education. The work is as follows:

Agriculture, one and three-fifths courses: General, Breeds of Live Stock.

Botany, three courses: Elementary, Systematic, Physiological.
Chemistry, three courses: Qualitative Inorganic, Organic.
Economics and Philosophy, three and one-fifth courses: Psychology, Sociology, Economics, Ethics and Pedagogy.
English, three courses: American Literature, English Literature, Argumentation.
Geology and Agronomy, three courses: Elementary Geology, Soil Physics, Advanced Geology.
History, three courses: General, American Institutions.
Horticulture, one and one-fifth courses: Horticultural Theory, Forestry.
Languages, six courses: German, Latin or French.
Mathematics and Astronomy, four courses: Geometry, Trigonometry, Surveying, Descriptive Astronomy.
Military, one and one-fifth courses: Drill, Lectures.
Physics, one course: General.
Zoology, one and three-fifth courses: Advanced Physiology, Advanced Zoology.
Electives, nine courses: Major, five; Minor, three; General, one.

Note—Instead of Breeds of Live Stock, Pomology may be chosen by those who take their majors in Horticulture, and English History by those who do not elect majors or minors in either Agriculture or Horticulture. The latter students may also take Physics instead of Soil Physics, and English Classics instead of Theory of Horticulture and Forestry. The young ladies are also required to take Household Economy, Domestic Dairying and Sewing instead of Physiological Botany, Surveying and General Agriculture, and Physical Culture instead of Military Exercises.

Students who wish to obtain a more extended training in Agriculture and Horticulture than this scheme permits, may elect Agricultural and Horticultural subjects in place of a foreign language. This work is intended to meet the wants of those who return to the farm and upon completing it in a satisfactory manner the student will receive the degree of Bachelor of Agriculture and is as follows:

Agriculture, seven and one-fifth courses: General, Breeds of Live Stock, Stock Feeding, Domestic Dairying, Stock Breeding, Equipment of Stock Farms, Soil Fertility, Agricultural Experimentation.

Botany, four courses: Elementary, Systematic, Physiological, Mycology.
Chemistry, six courses: Qualitative Inorganic, Organic, Quantitative Analysis, Chemistry of Foods, Agricultural Chemistry.

Economics and Philosophy, three and one-fifth courses: Psychology, Sociology, Economics, Ethics and Pedagogy.

English, three courses: American Literature, English Literature, Argumentation.

Entomology, one course.

Geology and Agronomy, three courses: Elementary Geology, Soil Physics, Advanced Geology.

History, three courses: General, American Institutions.

Horticulture, three courses: Horticultural Theory, Forestry, Pomology, Landscape Gardening, Evolution of Cultivated Plants.

Mathematics and Astronomy, four courses: Geometry, Trigonometry, Surveying, Descriptive Astronomy.

Military, one and one-fifth courses: Drill, Lectures.

Physics, one course: General.

Zoology and Veterinary Medicine, four and three-fifths courses: Advanced Physiology, Advanced Zoology, Veterinary Medicine, Bacteriology.

Note—Horticultural Investigation may be chosen instead of the second course in Veterinary Medicine.

Group B—This group is intended not only for those students who wish to prepare themselves for pursuits which require only a general knowledge of mechanical and physical principles, but also for those who wish to fit themselves for technical work in Mechanical and Electrical Engineering. It requires less literature, history and biology than Group "A," and only one year of foreign language, French, is required. However, those who do not elect work in Mechanical or Electrical Engineering can continue study along those lines in the Junior and Senior years. Students electing majors and minors in Physics and Mechanics should pursue work according to this scheme. Those who wish to specialize in Mathematics can also follow to advantage the required work of this group. Those who take their elective work in Mechanical or Electrical Engineering as outlined in the schedules will receive the degree of Bachelor of Science in Engineering studies. Those who choose their main elective
work in other departments than these two, will receive the regular degree of Bachelor of Science.

Botany, one and three-fifths courses: Elementary, Systematic.
Chemistry, two courses: Qualitative Inorganic.
Economics and Philosophy, two and four-fifth courses: Psychology, Sociology, Economics, Ethics and Pedagogy.
English, three courses: American Literature, English Literature, Argumentation.
French, three courses.
Geology, one course: Elementary.
History, two courses: General.
Mechanics, three courses: Elementary Mechanics, Steam Engine, Strains in Framed Structures.
Mechanical Drawing, two courses.
Military, one and one-fifth courses: Drill, Lectures.
Physics, four courses: General, Advanced.
Shop Work, two and three-fifths courses: Wood and iron work.
Zoology, three-fifths course: Advanced.
Electives, nine courses: Major, five; Minor, three: General, one.

Note—Students who are taking special work in preparation for Electrical Engineering may elect Dynamo Electric Machinery in place of Strains in Framed Structures.

Group C—Students who satisfactorily complete the work of the first two years of this course will receive the degree of Pharmacy Graduate. After the completion of the work of the next two years, the degree of Bachelor of Science will be conferred. This work in Pharmacy is offered nowhere else in the state and has received the hearty commendation of the State Board of Pharmacy. The subjects of this group offer excellent preparation for all the medical professions as well as for the teaching of science in high schools and colleges. Three elective courses are allowed and must be chosen from those subjects which are offered as major electives.

Botany, three courses: Elementary, Pharmacognosy.
Chemistry, four courses: Qualitative Organic, Quantitative Analysis.
Economics and Philosophy, three and one-fifth courses:
Psychology, Sociology, Economics, Ethics and Pedagogy.
English, three courses: American Literature, English Literature, Oratory.
Geology, two courses: Elementary, Advanced.
History, three courses: General, American Institutions.
Languages, three courses: German or Latin.
Mathematics and Astronomy, three and two-fifths courses:
Geometry, Trigonometry, Surveying, Descriptive Astronomy.
Military, one and one-fifth courses: Drill, Lectures.
Pharmacy, ten courses: Pharmacy Latin, Pharmacy, Materia Medica, Drug Assaying.
Physics, one course: General.
Zoology, four courses: Advanced Physiology, Anatomical Methods, Bacteriology.
Electives, three courses.

Schedules of the Groups—On the next few pages the schedules of the work of the different groups are given. The subjects printed in ordinary type are the required courses, while the electives are in italics. The notation immediately after the name of a subject indicates its nature and the number of times it occurs a week, "a" referring to the class work, and "b" to laboratory exercises. Whenever a choice is allowed between two subjects, as between Horticulture and English, the student must take that which bears more directly on his elective work. The work is arranged so that one elective course is offered during each term of the Junior year and two each term of the Senior year. While this is suggested as being the model arrangement, students are allowed to follow schemes of their own, providing all requirements are satisfied.

PRACTICAL AGRICULTURE.

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</table>

**SCIENTIFIC AGRICULTURE—GROUP A.**

**FALL**

### FRESHMAN
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory
- Pomology
- German or Latin
- French
- Quantitative Chemistry
- German or Latin
- Physiology Botany
- Breeds of Live Stock
- German or Latin
- French
- German or Latin
- French
- Oratory

### SOPHOMORE
- General History
- English Literature
- Geometry
- Elementary Botany
- Scientific Zoology
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### JUNIOR
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### SENIOR
- General History
- English Literature
- Geometry
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

**WINTER**

### FRESHMAN
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory
- Pomology
- German or Latin
- French
- Quantitative Chemistry
- German or Latin
- Physiology Botany
- Breeds of Live Stock
- German or Latin
- French
- German or Latin
- French
- Oratory

### SOPHOMORE
- General History
- English Literature
- Geometry
- Elementary Botany
- Scientific Zoology
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### JUNIOR
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### SENIOR
- General History
- English Literature
- Geometry
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

**SPRING**

### FRESHMAN
- General History
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory
- Pomology
- German or Latin
- French
- Quantitative Chemistry
- German or Latin
- Physiology Botany
- Breeds of Live Stock
- German or Latin
- French
- German or Latin
- French
- Oratory

### SOPHOMORE
- General History
- English Literature
- Geometry
- Elementary Botany
- Scientific Zoology
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### JUNIOR
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### SENIOR
- General History
- English Literature
- Geometry
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

**SCIENTIFIC HORTICULTURE—GROUP A.**

**FALL**

### FRESHMAN
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory
- Pomology
- German or Latin
- French
- Quantitative Chemistry
- German or Latin
- Physiology Botany
- Breeds of Live Stock
- German or Latin
- French
- German or Latin
- French
- Oratory

### SOPHOMORE
- General History
- English Literature
- Geometry
- Elementary Botany
- Scientific Zoology
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### JUNIOR
- General Physics
- Inorganic Chem. a and b
- American Literature
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory

### SENIOR
- General History
- English Literature
- Geometry
- Elementary Botany
- Military
- Astronomy
- Evolution of Cultivated Plants
- Soil Fertility
- Oratory
### STATE AGRICULTURAL COLLEGE.

**STATE AGRICULTURAL COLLEGE.**

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**DOMESTIC SCIENCE—GROUP A.**

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**MECHANICAL ENGINEERING—GROUP B.**

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### NOTES

- **DOMESTIC SCIENCE—GROUP A.**
- **MECHANICAL ENGINEERING—GROUP B.**
ELECTRICAL ENGINEERING — GROUP B.

FALL

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PHARMACY — GROUP C.

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DEPARTMENT OF COMMERCIAL SCIENCE.

The Commercial Department occupies commodious quarters on the second floor of the central building. Its rooms are exceptionally well suited to the work of the department and are supplied with tables, typewriters, offices for carrying on busi-
ness transactions, such as banking, mercantile and postoffice work. There are two distinct courses of study offered in this department, each extending over a period of one year: the Amanuensis or Shorthand course and the Business or Commercial course. When the student has satisfactorily completed either course he will be given a certificate of graduation. The applicant for graduation in the Amanuensis course must attain a shorthand speed, from general matter, of one hundred words per minute and transcribe the same on a machine at the rate of thirty-five words per minute. He must also show a thorough proficiency in his spelling, use of punctuation marks and other rules of composition and rhetoric. Neatness, thoroughness and speed are required of all. Penmanship and business letter writing, while not scheduled as a part of the regular course, are given particular emphasis throughout the year.

The admission requirements to the work of this department are the same as those to the Sub-Freshman class, except that Physical Geography is not required. No student should attempt either course until he has become proficient in the elementary branches of a common school education. It is both a waste of time and money to study shorthand and business branches before having formed the habit of correct spelling and neatness in written exercises. Students found to be deficient in any of the preparatory work will be required to make up the same.

The expenses are the same as for any other work in the institution and far below what is usually charged for such instruction. College charges per term of twelve weeks are five dollars, which includes the use of a typewriter. Books and stationery cost that much more per term. By economic living a student may complete an entire course for about one hundred and fifty dollars.

The work is as follows:

**AMANUENSIS COURSE.**

**FALL TERM.**

Shorthand, b 5.

b, Consonant stems, vowels, diphthongs, initials and final hook and circles, word signs, etc., in logical order. Elimination
of vocalization through position; the habit of coordination emphasized from the beginning.
Graham's Hand Book to page 261.
Rhetoric, a 5.
Typewriting, b5.
b. Graded exercises on machine to learn keyboard, care of machine, business letters, law forms, manifolding and mimeographing, department correspondence, speed practice, binding, folding, and filing of all kinds of typewritten matter. One hour each day during school hours.
Civil Government, b 5.
Military or Physical Culture.

WINTER TERM.

Shorthand b 5.
b. Completion of hand book, observing particularly reporting words, signs and contractions, word phrasing, etc., easy business letters and completion of I. C. R.
Graham's Hand Book. Graham's I. C. R.
Rhetoric a5
Bookkeeping, a 5.
a. In all its elementary phases, as journalizing, posting, taking trial balances, closing ledger, changing from single to double entry, etc., paying especial attention to penmanship, neatness and accuracy.
Typewriting, b5.
b. Continuation of work of Fall term. One hour each day during school hours. Students are required to transcribe all work taken in shorthand.
Military or Physical Culture.

SPRING TERM.

Shorthand, b2.
The aim of this term is to familiarize the individual with letters pertaining to all branches of commerce and social life.
Musick's Universal Dictation Book.
Commercial Law, a5.
a, Law in general, contracts, principal and agent, partnership, corporations, sales of personal and real property, bailments and common carriers, negotiable paper, deeds, mortgages and leases, collection laws, legal rates of interest, insurance, patent rights, trade marks and copyrights. This work is conducted by the outline method and at the end of each week an original essay of not less than five hundred words is required of each member of the class on the work covered during that period. At the close of term an original disquisition of not less than five hundred words touching upon all the work, is required. This must be typewritten, bound and in presentable shape to file for future reference.
Spencer's Commercial Law,

Typewriting, b5.

b, One hour each day during school hours. All work of this term to be from shorthand notes. The purpose of this is to give the student the power to read rotes readily and transcribe the same rapidly. A speed of thirty-five words per minute from shorthand notes is required for graduation.

Commercial Geography, a4.
a, This course is intended to give the student a practical knowledge of commercial conditions and methods and thus enable him the better to apprehend business.
Tilden's Commercial Geography.

Parliamentary Law, a1.
a, A short, concise course pertaining to the rules and regulations of parliamentary practice.

Military or Physical Culture.

BUSINESS COURSE.

FALL TERM.

Bookkeeping, a5.
a, For description of work see Amanuensis course.
Completion of Benton's High School Edition.

Rhetoric, a5.

Intellectual Arithmetic, a3.
a, To qualify the student to make rapid mental calculations. Multiplication table required up to twenty-five, inclusive.
Civil Government, a 5.
For description of work see Preparatory department.

Typewriting, b 5.

b, One hour each day during school hours. For description see Amanuensis course.
Military or Physical Culture.

**WINTER TERM.**

Bookkeeping, b 5.

b, Each student carries on regular retail business, through six offices, with the student body. While all transactions are of the same general nature, the results are different, thus creating in the individual student a habit of self-reliance. All work must be of a certain degree of excellency before the next step can be taken. This term’s work comprises four hundred different transactions, together with the necessary letters, checks, drafts, notes, etc., that would naturally attend the same in actual business.
Goodyear’s System of Business.

Commercial Arithmetic, a 5.

a, Short methods in addition, subtraction, multiplication and division, rapid calculations in percentage, interest, discount and ordinary arithmetical processes.
Goodyear’s Progressive Arithmetic.

Rhetoric a 5.
Military or Physical Culture.

**SPRING TERM.**

Business Practice, b 5.

b, Business practice, changing work of previous term into wholesale and commission business. All transactions are carried out by students with outside colleges, thereby approaching, as nearly as possible, actual business.
Goodyear’s System of Business.

Commercial Law, a 5.
a, For description of work see Amanuensis course.

Commercial Geography, a 4.
a, For description of work see Amanuensis course.

Parliamentary Law, a 1.
For description of work see Amanuensis course.
Military or Physical Culture.
SUB-FRESHMAN YEAR.

The work of this year is required for admission to the Pharmacy department and to the regular college courses. It includes subjects which no student can well omit, however technical a training is desired. While these courses serve as a foundation upon which the higher work is based, they are so chosen as to stimulate the desire of the student towards attaining this broader education. At the same time the work is thoroughly practical to every walk of life. Freehand Drawing and Horticulture are required of both sexes, while Carpentry is required of the boys and Cooking of the girls. One division of the class will take Carpentry during the Fall term and Freehand Drawing in the Winter term, while the other division will take these subjects in the reverse order.

FALL TERM.

El. Zoology .......... a 4, b 1 Freehand Drawing or
Rhetoric ............ a 5 Carpentry ............... b 3
Algebra ............. a 5 Military 3, or Phys. Culture 2

WINTER TERM.

El. Physics .......... a 3, b 2 Carpentry or Cooking or
Algebra ............. a 5 Freehand Drawing ......... b 3
Rhetoric ............ a 5 Military 2, or Phys. Culture 2

SPRING TERM.

Algebra ............. a 3 El. Physics .......... a 3, b 2
Geometry ............ a 2 El. Horticulture ..... a 1, b 2
Rhetoric ............ a 5 Military 3, or Phys. Culture 2

PREPARATORY YEAR.

The work in this department is prerequisite to all the other courses offered. Standings from public schools in the state will be accepted and due credit given for same grade of work completed there. The students of this department are under immediate charge of an experienced member of the faculty who superintends their methods of work and strives to secure the forming of correct habits of work and life on the part of all.

The Franklin Literary Society is made up entirely of Preparatory and short course students.

Students will not be admitted to this department unless they
show sufficient development and training to carry the work offered.

The following courses are offered:

**FALL TERM.**

**Arithmetic, a 5.**

a. Fractions, decimals denominate numbers, literal quantities and proportion.

   Bailey's Comprehensive Arithmetic.

**English, a 5.**

a. Technical Grammar.

   Maxwell's Advanced Lessons.

**U. S. History, a 5.**

a. A brief survey of the principal historic events from the discovery to the close of the Revolution.

   Montgomery's American History to Sec. V.

**Bookkeeping, a 3.**

a. Single and double entry sets in actual business.


**Military 3, or Physical Culture 2.**

**WINTER TERM.**

**Arithmetic, a 5.**

a. Percentage, interest, involution, evolution and mensuration.

   Bailey's Comprehensive Arithmetic completed.

**English, a 5.**

a. Continuation of previous course.

   Maxwell's Advanced Lessons.

**U. S. History, a 5.**

a. The leading events in U. S. History from beginning of 19th century to present time.

   Montgomery's American History completed.

**Civil Government, a3.**

a. An elementary study of civil institutions, local, state and federal. The township, the school district, the incorporated town, the city and county, historic origin, mode of organization, officers and functions. The state, with special study of the constitution of South Dakota. The nation, branches of government, powers of congress, the relation of the states, careful study of the constitution. Recitations, reading and occasional reports.
STATE AGRICULTURAL COLLEGE.

Smith and Young's History and Government of South Dakota.

SPRING TERM.

Elementary Physiology, a 5.

a, The anatomy of the chief structures of the human body and their physiology.

Martin's Human Body (briefer course).

English, a 5.

Continuation of previous course. The class will take up higher work in preparation for Rhetoric.

Buehler's Practical Exercises in English.

Physical Geography, a 5.

a, Physiography of the U. S.; introduction to El. Geology.

Davis's Physical Geography.

Elocution, a 3, and Reviews, a 2.

a, This course will aim to emphasize the importance of intelligent reading, correct spelling and legible writing; also such other reviews of elementary branches as may be found needful.

Lectures.

Military 3, or Physical Culture 2.

ADMISSION REQUIREMENTS.

GENERAL CONDITIONS OF ADMISSION.—The candidate for admission to the college must be at least fourteen years old and of good moral character. Students will be admitted regularly to the collegiate department as follows:

First, those who have satisfactorily completed the work of the Preparatory and Sub-Freshman years as resident students.

Second, those who pass examinations in this work at the college.

Third, those who have properly completed this work in any other reputable institution and present satisfactory evidence to that effect.

Students applying for entrance to the Preparatory department must present evidence that they have completed the work of the public schools as far as the ninth grade, and no one is allowed to pursue the work of the Sub-Freshman year or higher
work until grades in the Preparatory course have been obtained. Before entering upon any college work students must present satisfactory evidence that they have completed the prerequisites to that work, or else pass an examination in such prerequisites.

**Time of Entrance Examinations**—The Monday and Tuesday immediately before the opening of each term will be devoted to examining students applying for admission, both to the collegiate and the Preparatory departments.

**Admission from Other Institutions**—Students will be admitted to the college upon certificate from other reputable institutions, provided it shows:

First, that the student was honorably dismissed from that institution,

Second, that the student has completed creditably the work for which he requests credit. The college reserves the right, however, to cancel grades accepted from other schools should the student be found deficient in the subjects for which credit has been given.

**Entrance Conditions**—A student may be admitted to the college without having passed in one or two of his entrance studies. These shall stand against him and must be cleared up within one year after entrance or the student will be required to take the subject with the regular classes.

**Credits from Examination.**—If a student has passed in all his entrance subjects, he will be allowed to take examinations on any subject offered, if there are no prerequisites which shall bar him, and passing in such subjects shall receive due credit therefor.

**Special Students**—Students of mature years, who have passed in the work of the Preparatory department, may be allowed to pursue special studies if not candidates for a degree, but they must satisfy the faculty that they are qualified to take up the studies desired.

**SHORT COURSES OFFERED.**

**SPECIAL COURSE IN AGRICULTURE.**

This is an arrangement of certain short courses in the Winter term designed to be taken by farmers' sons who for any reason
are unable to take more extended work. To such students this work will be as valuable and should become as popular as the special dairy work. The work consists of the following courses, upon completion of which students will be given a certificate.

**General Agriculture and Care of Dairy Cows**...a 5
**Dairy Lectures**..............................a 5
**Dairy Arithmetic**............................a 3
**Elective Laboratory**..........................b 5
**Lectures in Botany, Entomology, Zoology**......a 3

**SPECIAL WORK IN DAIRY SCIENCE.**

In response to a popular demand for instruction in Dairy Science, resulting from the rapid growth and importance of the industry in the state, the college has for some years maintained facilities for this instruction. The work combines in a proper degree theoretical and practical methods. A new creamery was constructed on the college campus during the summer of 1899. This has been thoroughly furnished and fitted with the most modern appliances for making butter and cheese and for testing and sterilizing milk. A satisfactory completion of the work offered entitles the student to a certificate of competency as helper and after four months in this capacity, on the recommendation of his creamery manager, he may receive an advanced certificate as competent to operate a creamery.

The following work is offered during the Winter term:

**General Agriculture and Care of Dairy Cows**...a 5
**Dairy Lectures**..............................a 5
**Dairy Arithmetic**............................a 3
**Dairy Engineering**............................a 2
**Lectures in Botany, Entomology and Zoology**...a 3
**Bookkeeping**...............................a 3
**Dairy Practice**..............................b 5

**SHORT COURSE IN HORTICULTURE.**

Special Commercial Nursery Course. Lectures and practical work in commercial propagation and nursery management of fruit trees, small fruits, forest trees, ornamental trees, shrubs and plants, grafting, budding, pruning, cutting scions, packing grafts, making cuttings and stratifying seeds.

Lectures: Budd’s Handbook of Horticulture, Bailey’s Nursery Book, Goff’s Principles of Plant Culture, Green’s Amateur.
Modern agricultural methods have introduced in such a marked degree the steam engine as a substitute for animal power that the consequent growing demand for steam engineers has led the college to arrange a one year course of study for the special training of steam (especially traction) engineers. Extreme care has been taken only to offer such work as shall prove valuable to the man running the traction engine or other machinery. A relatively large amount of shop work, engine repairing and engine running is introduced, with a proper proportion of recitations in closely allied subjects. Upon the satisfactory completion of this work the student is given a certificate which is virtually the same as a license in this state to run an engine.

Students who complete the work of the Fall term of the Preparatory department will be admitted as candidates for certificates without entrance examinations. Others are expected to pass satisfactory examinations in Arithmetic and English as far as the Preparatory class carries those subjects in the Fall term. Also to read intelligently and show such general elementary training as shall indicate that they are able to understand the subjects embraced in the Engineering course. At present this would require preparation in Arithmetic to percentage, and in English a thorough knowledge of elements of grammar and the analysis of ordinary English prose sentences.

**WINTER TERM.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arithmetic</td>
<td>a 5</td>
</tr>
<tr>
<td>Civil Government</td>
<td>a 2</td>
</tr>
<tr>
<td>Forging</td>
<td>b 3</td>
</tr>
<tr>
<td>Physics of Steam</td>
<td>a 5</td>
</tr>
<tr>
<td>Physics</td>
<td>a 3</td>
</tr>
<tr>
<td>Mechanical Drawing</td>
<td>b 2</td>
</tr>
</tbody>
</table>

**SPRING TERM.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Engineering</td>
<td>a 2</td>
</tr>
<tr>
<td>Physical Geography</td>
<td>a 5</td>
</tr>
<tr>
<td>Forging</td>
<td>b 2</td>
</tr>
<tr>
<td>Steam Engine Lectures</td>
<td>a 5</td>
</tr>
<tr>
<td>Engine Practice</td>
<td>b 5</td>
</tr>
<tr>
<td>Mechanical Drawing</td>
<td>b 3</td>
</tr>
</tbody>
</table>

**SHORT COURSE IN DOMESTIC SCIENCE.**

For the benefit of young ladies who are not able to take an extended course in the college, special work in this and allied departments is offered during the Winter term. Its aim is to
furnish sound training and thus to give an impetus to scientific applications in practical life. A certificate of proficiency will be given to those students who complete in a satisfactory manner the following:

Cooking .................. b 2  Sewing .................. b 3
Domestic Dairying ....... b 2  Science Lectures ........ a 3
Household Art .......... b 2  Hort. and Home Gardening, b 3
Music and Freehand Drawing as desired.

HOME READING COURSE.

The college also aims to reach and interest farmers in their homes. It offers instruction by correspondence to those who will read such books as are recommended and send to the college written answers to questions sent out. Six distinct courses are offered in this way and it is certainly a rare opportunity for self improvement. Those who desire a circular giving these courses and the method of procedure should write the President of the college for same.

FARMERS' INSTITUTES.

Another effort of the college to educate the farmer is through the institute. By this plan the different professors of agricultural branches are sent out to such communities as will arrange for a three days session and provide the facilities necessary to conduct a successful institute. During 1901 there were twenty-three of these institutes held in different parts of the state. Total attendance was 8,000 and the average nearly 300. The amount of time given to this work by college and station staff was forty-six days. The number of staff officers participating was four. The state appropriation for this work was $2,000.

ATTENDANCE FOR YEAR 1900-1901.

Post graduate students ........................................ 9
Senior class ................................................... 24
Junior class ................................................... 15
Sophomore class ............................................... 29
Freshman class ............................................... 57
Sub-Freshman class .......................................... 77
Amanuensis class ............................................. 14
Business class ............................................... 24
Preparatory class ............................................. 140
<table>
<thead>
<tr>
<th>Course</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam Engineers</td>
<td>45</td>
</tr>
<tr>
<td>Dairy course</td>
<td>15</td>
</tr>
<tr>
<td>Agriculture (short course)</td>
<td>3</td>
</tr>
<tr>
<td>Art (short course)</td>
<td>8</td>
</tr>
<tr>
<td>Domestic Science</td>
<td>6</td>
</tr>
<tr>
<td>Music (piano, voice, violin)</td>
<td>27</td>
</tr>
<tr>
<td>Unclassified in any of above</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>508</strong></td>
</tr>
</tbody>
</table>

**SPECIALS NOT CLASSIFIED IN ABOVE.**
- Saturday Art class: 27
- Saturday Domestic Science class: 32
- Members Home Reading courses: 43
- **Total Special**: 102

**Whole number of students receiving instruction**: 610

**FURTHER STATISTICS CONCERNING STUDENTS.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students pursuing courses in Agriculture</td>
<td>38</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Mech. Engineering</td>
<td>96</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Elec. Engineering</td>
<td>8</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Household Econ.</td>
<td>36</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Vet. Science</td>
<td>7</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Dairying</td>
<td>14</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Military Tactics</td>
<td>118</td>
</tr>
<tr>
<td>Number graduating in June, 1901 (men)</td>
<td>14</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; (women)</td>
<td>12</td>
</tr>
<tr>
<td>Average age of graduates, June 1901</td>
<td>21</td>
</tr>
</tbody>
</table>

**DEGREES CONFERRED 1900-1901.**
- On men—Bachelor of Science: 10
- Pharmacy Graduate: 2
- Master of Science: 2
- On women—Bachelor of Science: 12

**CERTIFICATES ISSUED ON COMPLETION OF SHORT COURSES 1900-1901.**
- Dairy students: 10
- Dairy students (advanced): 8
- Steam Engineers: 18
- Amanuensis students: 5
- Commercial students: 4
STATE AGRICULTURAL COLLEGE.

Art students.................................................. 1

Total certificates issued....................................... 46

PROFESSORS AND INSTRUCTORS, 1900-1901.

<table>
<thead>
<tr>
<th></th>
<th>FEMALE</th>
<th>MALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparatory classes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Collegiate and special classes</td>
<td>3 23</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3 26</td>
<td></td>
</tr>
</tbody>
</table>

Number in staff of Experiment Station................. 9

STUDENT LABOR DURING YEAR 1900-1901.

Whole number of students employed during year........ 109

Average amount earned by each......................... $ 35 40

Total amount expended for student labor............. 3,858 58

Amount of state appropriation for student labor..... 1,000 00

RECEIPTS FOR YEAR ENDED JUNE 30, 1901.

State Aid—(a) Appropriation for current expenses $ 18,000 00

(b) Appropriation for buildings................. 2,500 00

Federal Aid—(a) Morrill Fund, Act of Aug. 30, 1890. 25,000 00

(b) Hatch Fund, Act of March 2, 1887 15,000 00

Fees and all Other Sources—(a) Tuition fees......... 3,800 00

(b) Incidental fees ...................... 1,593 10

(c) Miscel. receipts .................... 13,660 60

Total receipts........................................ $79,493 70

EXPENDITURES DURING THE YEAR ENDED JUNE 30, 1901.

Instruction (and facilities) as by Morrill Act ........ 25,000 00

Instruction not provided for by Morrill Act........ 4,500 00

Administrative expenses ...................... 27,362 07

For repairs on buildings, etc..................... 5,464 00

For Experiment Station ....................... 15,169 21

Total.................................................... $77,495 28

PROPERTY YEAR ENDED JUNE 30, 1901.

Value of buildings................................. $115,500 00

Value of Apparatus ................................ $10,000 00

Value of Machinery ................................ $2,000 00

Total number of acres in farm and grounds ...... 400

Total number of acres under cultivation ........ 200
<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres used for experiments</td>
<td>110</td>
</tr>
<tr>
<td>Value of farm and grounds</td>
<td>$20,000</td>
</tr>
<tr>
<td>Acres allotted to state by national bequest</td>
<td>160,000</td>
</tr>
<tr>
<td>Acres still unsold</td>
<td>160,000</td>
</tr>
<tr>
<td>Value of unsold land</td>
<td>$800,000</td>
</tr>
<tr>
<td>Number of bound volumes in library</td>
<td>6,536</td>
</tr>
<tr>
<td>Number of unbound volumes in library</td>
<td>10,500</td>
</tr>
</tbody>
</table>
REPORT OF EXPERIMENT STATION.

To President J. W. Heston, South Dakota Agricultural College:

Sir:—I herewith submit to you reports of the work done by different members of the station staff during the year ended June 30, 1901.

Jas. H. Shepard, Director.

REPORT FROM DEPARTMENT OF AGRICULTURE.

Jas. H. Shepard, Director:

Dear Sir:—The work of the Agricultural Department of the Experiment Station for the fiscal year ending June 30th, 1901, has been largely a continuation of the work of former years.

The field work of moisture determination was not continued during the spring of 1901, but the laboratory and office work is being carried forward as rapidly as possible and the results will be published at the earliest possible date. It is the intention to continue the field work, but it was thought advisable to first thoroughly digest the results already obtained in order to learn, if possible, whether any modifications in methods would be advisable.

The cooperation work in soil analyses has been carried on as rapidly as other work would permit and a large amount of data is on hand that will be published as soon as the council may deem it advisable.

The work in crop rotation, begun four years ago, is being carried on steadily as originally planned, and some valuable results are being obtained. A bulletin on this subject is soon to be issued.

The work of testing, propagating and distributing new and
superior varieties of grains and forage crops is becoming a more and more important feature of our work. A large amount of Brome grass seed has been sold. Three superior varieties of oats and one of corn will be sold in considerable quantities to selected farmers in various parts of the state who will agree to raise the grain for seed. About 700 bushels of oats of very superior quality will be available for this purpose during the coming season. A considerable quantity of Turkestan alfalfa is being propagated for this purpose; also some very promising rye and wheat grasses. Winter wheat has been successfully grown and a limited amount of seed is available for trial in various parts of the state. About one hundred and sixty varieties of wheats, barleys and spelts have been grown at the home station and at Mellette in cooperation with the Bureau of Plant Industry at Washington. Many of them are macaroni wheats and these have made a splendid showing, yielding about double that of selected Blue Stem and Fife wheats. This matter of plant breeding is becoming so important, is assuming such proportions and is yielding such valuable results that it will be necessary to largely increase the amount of land devoted to experimental plats, which will be done by breaking up about fifteen acres of meadow and pasture land and laying it out into one-tenth acre experimental plats, which work has been begun.

Some very interesting experiments in feeding spelts and barley to fattening lambs have been carried on during the year and the results have been published as Bulletin No. 71.

Respectfully,

E. C. CHILCOTT, Agriculturist.

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REPORT OF THE CHEMICAL DEPARTMENT.

To President John W. Heston:

DEAR SIR:—The work of the Chemical Department during the fiscal year ending June 30th, 1901, has been along the same lines as those of last year.

The work in soil analysis has been brought to a close. The results are now ready for publication. This investigation has extended over several years and the amount of labor involved has been great. In all, one hundred and twenty-four analyses
have been made. These soils are typical ones gathered from widely separated localities throughout the state; and this work is one of the first steps in a general soil survey now in progress under the joint cooperation of the Departments of Agriculture and Chemistry.

The work in analyzing native and introduced forage plants has been continued. Enough new data have been gathered to warrant the publication of a bulletin, No. 69, issued jointly by this Department and the Department of Botany. This bulletin gives about fifty analyses, all of interest to the farmers of the state. Many of these give analyses of substances not hitherto analyzed.

Although this Department has made no miscellaneous analyses officially, nevertheless my assistant has made a number of determinations of local interest for different localities throughout the state. This work was all done under private arrangements made with my assistant.

Very respectfully submitted,

Jas. H. Shepard, Chemist.

REPORT OF THE BOTANIST AND ENTOMOLOGIST.

To Jas. H. Shepard, Director:

Sir:—The work of the Botanist and Entomologist has been along the lines laid down in the last annual report.

In the Missouri river counties the grasshoppers have become a serious menace to crops and many reports also have been received of serious damages in the James River valley. Occasional reports are also received of local damages farther east. The damages are caused largely by native hoppers which have been on the increase during the last three or four years. The Colorado or migratory locust is quite generally distributed throughout the state, but in comparatively small numbers.

A test has been made of numerous varieties of forage plants sent out by the Division of Seed Importation of the Department of Agriculture. Several have already given promise of being valuable additions. They will be adapted to South Dakota conditions by breeding and selection. Especial attention has been given to plant breeding during the past year. A large number of crosses were made on wheat, oats and peas with the idea of
improving hardiness and quality. From the crosses made a year ago several interesting varieties were obtained which it is hoped will be of value. Selections are also being made of the best varieties of wheat and other grains, with the hope of materially increasing the yield. Several plants which already produce valuable forage crops in this state, but which do not produce seed, are being bred to a shorter season.

At the Highmore station some interesting results are being obtained. About fifty acres are now broken and under cultivation, besides some twenty acres on which experiments in pasture renewal are being made. The best results have so far been obtained with sorghum, Jerusalem corn, Milo maize, rape and several varieties of millet. The Black Veromzh millet gives the best yields of seed and the Kursk the largest and best yield of hay.

Respectfully submitted,

D. A. Saunders.

REPORT OF HORTICULTURAL DEPARTMENT.

Professor Jas. H. Shepard,
Director Experiment Station,
Brookings, South Dakota:

Dear Sir:—I have the honor to make the following report of the work in the Department of Horticulture for the fiscal year ending June 30, 1901.

The work of this Department has been continued along the lines noted in my earlier reports, and substantial progress has been made. The experiments under way may be divided into two classes: First, experiments with vegetables and other plants of which results available for publication can be obtained in one year; second, those requiring a number of years to complete. To the latter class belongs our extended work in plant-breeding. In the earlier years of the station, variety testing of plants was of great importance to indicate to the prairie settler the things of value in the lists of the older states, but now the most important line of work is the breeding of hardier varieties to fill the serious gaps which experience has shown to exist in the list of hardy varieties adapted to our prairies.

The cultural and variety tests with several hundred varieties
of vegetables in 1899 and 1900 form the subject matter of Bulletin No. 68, dated November, 1900. It was shown that many vegetables not now generally grown in South Dakota gardens could be included in the list with advantage, also that many varieties are not safe for general planting.

Considerable material has accumulated which should be published during the coming year as bulletins on the following subjects:

1. Report upon fruit culture, including variety tests, description of varieties, methods of propagation to prevent root-killing, effects of girdling, experiments in root-grafting and top-grafting, cultural notes.

2. Report upon ornamental trees and shrubs, hedge plants and out-door floriculture, including variety, cultural and propagation tests.

3. Report of progress and methods in plant-breeding. The appropriation of ten thousand dollars by the legislature for a plant-breeding building will make this a timely bulletin. During the past two years over twenty-seven thousand seedlings of native fruits have been raised in this Department in the hope of originating new and improved varieties. The following list shows in round numbers the seedlings at digging time last Fall. These have been set in plantations for fruiting and a large proportion of the strawberries, currants, gooseberries and sand cherries give promise of bearing fruit this year.

LIST OF SEEDLINGS.

Sand cherry, 8,400; plum, 4,000; grape, 5,000; wild strawberry, crossed with tame, 5,000; strawberry, pure native, 1,000; pin cherry, 25; choke cherry, 360; golden currant, 200; black currant, 2,200; buffalo berry, 180; gooseberry, 425; wild raspberry, crossed with tame, 200; raspberry, pure native, 40; total, 27,030.

In addition to the above about 650 seedlings of choice varieties of the apple, and over 500 seedlings of a combined hedge and fruit plant (Hippophae) from Irkutsk, Siberia, was raised during the past two years. The apple crop of 1900 was large, but the severe wind storm of August diminished the crop of perfect fruit. By the aid of a special watchman much of the fruit was saved and the seeds removed for the seedling experi-
ments. The seed was sown last Fall and this Spring, mostly in beds, and at this writing a full crop of thrifty seedlings has appeared. Several thousand seedlings of the pure Siberian crab, *Pyrus baccata* were raised last year by the European nursery method of transplanting as soon as the plants are large enough to handle, but the dry weather prevented strong growth in most cases. These plants came through the Winter in perfect condition without being mulched. They are intended for use in experiments to test their value as a hardy stock for the cultivated apple, and many of them will be sent to nurserymen to use in a cooperative budding experiment. The absolute necessity now existing for a stock hardier than the one now in common use, has caused this Department to make special effort to solve the problem. This Spring several pounds of seed direct from the heart of Siberia was received by the courtesy of the U. S. Department of Agriculture. This question of hardy stocks to prevent root-killing was discussed in Bulletin No. 65 of this Station.

Progress in breeding an extra early tomato is reported in Bulletin No. 68. We hope to produce a tomato that does not need the assistance of a hotbed or greenhouse to produce a good crop before frost. The work of improving the “stubbleberry” or nightshade (*Solanum nigrum*) as found upon the prairies of this state, is being continued. 1,730 plants were grown in the field in 1900 and the effects of the two years' cultivation and selection were apparent. The fruit of this plant is much used by prairie settlers for pies, canning and preserves, and has not been found to be poisonous.

The work of crossing the wild strawberries of the Dakotas and Manitoba with cultivated sorts was continued during the Winter. Over five hundred pots of wild and tame strawberries, including a lot of seventeen varieties, mostly overbearing, imported from France last Fall, were grown in the greenhouse during the Winter, and 1,300 flowers operated upon. The seed from the many berries obtained was planted at once and is now germinating satisfactorily in the boxes. A few of the seedlings produced from last Winter's work were also grown and some of them produced fruit of good size and quality. The need of a hardier race of strawberries than that which has come to us from the Eastern states is generally felt by our prairie planters
and it is hoped that this work will produce the varieties desired. Considerable seed of wild fruits was collected from various parts of the Northwest last Fall and the seed is germinating satisfactorily. A small importation of fruit novelties was made from a nursery in Germany during the early Winter. Many new vegetables are on trial this year, including a lot secured by the U. S. Department, No. 23, reported in Bulletin No. 67, will be grown this year in various parts of the state. This has proved to be the earliest variety in two years' trial.

Respectfully submitted,

N. E. Hansen, Horticulturist.

DEPARTMENT OF ZOOLOGY AND VETERINARY SCIENCE.

Jas. H. Shepard, Director:

SIR:—I have the honor to submit the following report of the work done by this department during the year ended June 30, 1901.

You are doubtless aware that the demands on my time for actual teaching purposes have been so great as to leave little opportunity to carry on investigations in any line. It is hoped an assistant may soon be provided who will relieve me of a large part of this burden that I may devote more time to experimental work.

Last year some preliminary work was undertaken upon parasitic diseases of lamb, especially the stomach and tape worms. During the present year no outbreaks of this nature have occurred in our college flock and consequently this work has been temporarily held in abeyance.

For the past three Springs a small number of college lambs have died from pneumonia. As far as notes have been taken the condition does not seem to be referable to climatic conditions alone. During the present Spring specimens of diseased lung have been obtained for microscopical examination, and cultures have been made from affected lungs. Up to the present date, however, I have not had time to work them out. This I hope to do during the coming vacation months. This
will determine whether any pathogenic organisms can be obtained and next Spring whether or not the disease can be transmitted by inoculation.

A disease appeared recently among the college swine which was referred to the character of the food. Later one of the sows died, presenting many of the post-mortem appearances of swine plague. Inoculation of various media, however, from different organs and tissues, gave pure cultures of organisms presenting many of the cultural characteristics of the B. coli communis. Further investigations may show it to be a variety of the colon group.

An outbreak among a herd of swine in our immediate vicinity revealed an organism presenting the staining peculiarities of the bacterium of swine plague. Cultures were made from some of the organs, but there has yet been no time to make any study of these. My attention was called to this outbreak only after it had existed for some time, and a request for more recent post-mortem material was not complied with.

Respectfully submitted,

E. L. Moore, Veterinarian.

REPORT OF DAIRY DEPARTMENT.

Jas. H. Shepard, Director:

Dear Sir:—In regard to the experimental dairy work for the year ending June 30th, 1901, I beg leave to report that pursuant to the authorization of the Regents of Education to make experiments relative to the variations of cream and milk by the Babcock and Lactometer tests, I have visited creameries in the western, central and eastern parts of this state east of the Missouri river for that purpose and have succeeded in obtaining samples of milk as it came from the weigh-can, testing it and comparing the test with that from the composite samples kept by the creameries in question, thereby being enabled to prepare data which will show, as nearly as may be, the average variations in ordinary creamery work. A bulletin has been prepared from this data and is now ready for publication, which
will, I think, furnish much needed information to the patrons and managers of the numerous coöperative creameries and cheese factories which have sprung up in this part of the state within the past few years. The necessity for this work is manifested by the correspondence coming to this office accompanied by samples of milk or cream, or both, for analysis where disputes have arisen between patrons and management as to the possibility of there being so great a variation from month to month in the same milk as is sometimes shown by the returns. Modern methods of dairying are comparatively new to most of our people, who are anxious to receive reliable and impartial information from some higher source than the management of a coöperative creamery or cheese factory. It is expected that the data contained in this bulletin will supply a want which has been felt by the dairy farmers of the state for some time.

Very respectfully,

A. H. Wheaton.

STATEMENT OF EXPENDITURES OF EXPERIMENT STATION DURING THE YEAR ENDED JUNE 30, 1901.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Hatch fund</td>
<td>$14,342.69</td>
</tr>
<tr>
<td>From other sources</td>
<td>2,359.87</td>
</tr>
<tr>
<td>Total</td>
<td>$16,702.56</td>
</tr>
</tbody>
</table>

ITEMIZED STATEMENT.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>$10,106.89</td>
</tr>
<tr>
<td>Labor</td>
<td>1,819.10</td>
</tr>
<tr>
<td>Publications</td>
<td>1,226.45</td>
</tr>
<tr>
<td>Postage and stationery</td>
<td>243.38</td>
</tr>
<tr>
<td>Freight and express</td>
<td>209.78</td>
</tr>
<tr>
<td>Heat, light, water and power</td>
<td>1,057.23</td>
</tr>
<tr>
<td>Chemical supplies</td>
<td>280.51</td>
</tr>
<tr>
<td>Seeds, plants and sundry supplies</td>
<td>164.05</td>
</tr>
<tr>
<td>Feeding stuffs</td>
<td>140.32</td>
</tr>
<tr>
<td>Library</td>
<td>18.90</td>
</tr>
<tr>
<td>Tools, implements and machinery</td>
<td>505.48</td>
</tr>
<tr>
<td>Item</td>
<td>Amount</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Furniture and fixtures</td>
<td>74.97</td>
</tr>
<tr>
<td>Scientific apparatus</td>
<td>636.38</td>
</tr>
<tr>
<td>Traveling expenses</td>
<td>135.44</td>
</tr>
<tr>
<td>Contingent expenses</td>
<td>20.00</td>
</tr>
<tr>
<td>Repairs</td>
<td>63.68</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$16,702.56</strong></td>
</tr>
</tbody>
</table>

August 30, 1901.