THE UTAH AGRICULTURAL COLLEGE.

Announcement

OF ITS

OPENING YEAR.

J. P. SMITH, PRINTER, LOGAN.
THE ORGANIZATION

Course of Instruction

of the

Agricultural College of Utah.

LOGAN, UTAH,
1890-91.
CALENDAR FOR 1890--91.

First Term Opens. ................. Tuesday, September 2, 1890
First Term Closes. ................. Tuesday, December 23, 1890
Second Term Opens. ............... Tuesday, January 6, 1891
Second Term Closes. ............... Thursday, March 19, 1891
Third Term Opens. ................. Tuesday, March 24, 1891
Third Term Closes. ................. Thursday, June 4, 1891

DEDICATION EXERCISES.

On Thursday September 4th, the College will be dedicated to education. Distinguished public men of the Territory will be present and deliver addresses on the occasion.
BOARD OF TRUSTEES.

William S. McCormick ................................ Salt Lake City
William N. Brown .............................................. Provo
Christian F. Olsen ........................................... Hyrum
Robert W. Cross .............................................. Ogden
Melvin B. Sowles .............................................. Salt Lake City
John E. Hills .................................................. Provo
James T. Hammond ............................................. Logan

OFFICERS OF THE BOARD.

William S. McCormick ................................ President
John T. Caine, Jr. .............................................. Secretary
H. E. Hatch .................................................... Treasurer
FACULTY.

ARRANGED IN ORDER OF SENIORITY OF APPOINTMENT.

JEREMIAH W. SANBORN, B. S., President.

Professor of Agriculture.

EVERT S. RICHMAN, M. S. A.

Professor of Horticulture and Botany.

WILLIAM P. CUTTER, B. S.

Professor of Chemistry.

ABBIE L. MARLATT, B. Sc.

Professor of Domestic Economy.

Professor of Mechanical Engineering.

Professor of English.

Professor of Military Science.

ALONZO A. MILLS, B. Sc.

Farm Superintendent.

Note:—The chairs of English, Mechanical Engineering and Mathematics were not filled at the time this announcement went to press, but negotiations were nearly completed with specialists for each of these chairs.

The chairs of Physics, Geology, Veterinary Science, Zoology, Civil Engineering, and other chairs will be filled by specialists as they are reached in the courses of instruction.
EXPERIMENT STATION ORGANIZATION.

Board of Control,
The Board of Trustees of the College.

Station Staff.

JEREMIAH W. SANBORN, B. S. .............................................. Director
EVERT S. RICHMAN, M. S. A.  Horticulturist and Entomologist
WILLIAM P. CUTTER, B. S. .................................................. Chemist
ALONZO A. MILLS, B. Sc. ............................................... Supt. of Experiment Work
JOHN R. WALKER ......................................................... Clerk and Stenographer
H. E. HATCH .......................................................... Treasurer
The Agricultural College of Utah was organized by an act of the Territorial Legislature, approved March 8th, 1888, accepting the provisions of an act of Congress, introduced by Hon. Justin S. Morrill of Vermont, and made a law July 2, 1862.

The purposes of Congress are seen in the following quotations from the National law: “And the interest of which shall be inviolably appropriated by each state, which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tatics, to teach such branches of learning as are related to Agriculture and the mechanic arts * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.”

THE PURPOSE OF THESE COLLEGES.

The organic law founding these Colleges names agriculture first. This fact, coupled with the further fact that agriculture is the basic industry, quite properly determined most of the States, in giving name to these new institutions of learning, to fix upon that of Agricultural College.

The evident intention of Congress to give prominence to agricultural instruction at these institutions, and the transcendent importance of farming among the industries, have led the masses to assume that teaching agriculture as an art is the supreme, if not the only function of these institutions.

This false view has led to much unfortunate misunderstanding that has been detrimental to both the colleges and those in whose interest they were established. At the threshold of this
new college existence it is desirable that its legitimate functions be clearly understood by those for whom it was most wisely and generously founded.

The law states the mission of these Colleges to be the teaching of "such branches of learning as relate to agriculture and the mechanic arts." Something more than manual practice was intended by the law makers. The foundation for broad and comprehensive reasoning was to be laid by these industrial schools. All that science and learning can do to increase the manual skill or to widen the field of vision of the industrialist, either in giving deftness or direction to the hand, or in the substitution for it, of the physical and more productive forces through the application of increased intelligence, comes within the scope of the law. Indeed, a wider purpose came within the purview of the statutes, as witnessed in the following quotation from them: "In order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The benefits of the law were to be extended beyond farmers and mechanics to those of the several "pursuits and professions of life," and for all of the industrial classes beyond the making of the more expert industrialist to his liberal education as a man and a citizen. There is to-day a keen struggle on the part of the nations for supremacy in the marts of the world. This has been brought about by the marvelous development of the arts within the past thirty years, especially by the perfection of steam transportation by land and sea, whereby the nations of the world have become one commercial neighborhood. Congress recognized, in the provisions of the law; the fact that the intelligence of the industrial classes is the measure of the productive powers of nations, and thus sought to prepare this nation for industrial success. Congress further recognized the fact that more and more the honor, wealth and stability of the nation rests in the keeping of the industrial classes, known as the "great middle classes." From their ranks have risen those to whom the country has committed its interests, and to whom it will, in an increased degree, commit them in the future. Agitation and combination have brought about within a decade a marvelous increase of the direct power of these industrial classes. No fact has been more significant in the growth of this power than the increased conservatism with which it has been used. More intelligence has distinguished the movement than heretofore. A liberal education for the industrial classes will de-
The Agricultural College of Utah.

velop not only stronger and wiser, but more conservative men for their leadership.

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AN EDUCATIONAL DEPARTURE.

On emerging from the dark ages the world had no literature from which to draw knowledge and inspiration, save that of the ancient civilizations of Greece and of Rome. This only source of information and culture became the main instruction of the schools, and of course the fashionable instruction, three centuries ago. Despite the superior civilization of to-day, with its broader culture, and despite the new world of thought and action—the outgrowth of sciences unknown to the narrower vision of the ancients—the study of ancient literature remains, through the force of custom, the central work of classical colleges. Herbert Spencer, alluding to classical education says: "Men dress their children's minds as they do their bodies, in the prevailing fashion." Congress gave to the industrial classes, who could not, would not, or did not care to afford a classical education, opportunity to inform themselves of the civilization, of the varied and deeply interesting natural world of the physical, controlling and productive forces surrounding them and daily reacting upon their destinies. The control of natural agencies has vastly multiplied the productive powers of man. This widening power has broadened and is still broadening man. These colleges which seek to extend knowledge of the applied sciences, may therefore be looked upon, in their benign influence on humanity, as the most important higher educational movements of all time.

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COLLEGE POLICY.

To the full extent of its resources, the College will carry out the broad policy of its founders. First and prominently, it "will teach such branches of learning as relate to agriculture and the mechanic arts." The former being in the thought of Socrates, the mother and nurse of all other industries, will receive special attention. This Department will be made all that the people of Utah will support, not by money alone, but by the attendance of their sons and daughters. (The special consideration of this and other departments will be found under appropriate heads.) The prominence given to the De-
The Agricultural College of Utah.

Department of Agriculture will give rise to no jealousies, as the character of the agriculture of a country is the measure of the prosperity of other industries, and of a nation's wealth and culture.

The wealth and variety of Utah's mineral resources adapted to the arts, are such that the College will fall far short of its duty if it does not give a zealous and earnest attention to mechanic arts and to civil engineering. This work will be extended so as to embrace mining and irrigation engineering.

The young women of the Territory attending the College will be put on an equal footing with the young men in obtaining a special education for their sphere of life.

A review of the College courses, which will be found on following pages, shows that the College authorities have not forgotten that the man is before the industrialist. The technical work will be accompanied by those studies best calculated to impart that information which the average citizen now finds most useful and pleasurable.

For more detailed information regarding the proposed work of the College, the reader is referred to information given under "Courses of Study."

RESOURCES OF THE COLLEGE.

Congress provided "that there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land to be appropriated to each State, a quantity equal to 30,000 acres for each Senator and Representative in Congress, to which the States are respectively entitled." The law provides for the sale of these lands by the States without cost to the funds, and says: "so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned." After defining the purposes of the grant, which have already been discussed, and after providing for the safe investment of the funds derived from the sale, the law says in Section 5:

The grant of land and landscrip hereby authorized, shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

First. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon shall, by any action or contingency be diminished or lost, it shall be replaced by the State to which it belongs; so that the capital of the fund shall remain forever undiminished, and the annual interest shall be regularly applied with-
out diminution to the purposes mentioned in the fourth section of this act, except that a sum not exceeding ten, per centum upon the amount received by any State under the provisions of this act, may be expended for the purchase of lands for sites or experimental farms, whenever authorized by the respective legislatures of said States.

Second. No portion of said fund nor the interest thereon shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

On the admission of Utah to statehood, the College will come into possession of some 120,000 acres of land, the funds derived from the sale of which, as it has been seen, Utah will be under obligation to perpetuate as a permanent fund for the maintenance of the College.

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THE EXPERIMENT STATION.

By an act of Congress passed on March 2d, 1887, $15,000, which it was expected would become an annual appropriation, was appropriated for experimental work, to be conducted in connection with the agricultural colleges. The first appropriation, or that of 1862, was for the exclusive purpose of teaching or imparting information already acquired, and to all classes of industrialists. The second appropriation, by law, is to be wholly devoted to the acquisition of information, or is wholly for research. This original research is to be in the field of agriculture, and is not for students alone, but is primarily for the farmer. The Congressional law defines quite fully the proposed line of research. Briefly stated the investigation intended may legitimately cover any question relating to economic agriculture.

Under the "Course in Agriculture" the brief presentation of the work now going forward at this station, will illustrate the purpose of the law.

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RELATIONS OF UTAH TO THE COLLEGE.

In accepting the grant of Congress for founding both the College and the Station, Utah pledged herself to carry out the purposes of Congress in good faith and accepted the obligation to equip and maintain the College, and to guard its funds.

The College is, then, a Territorial institution, fully under its control within its stipulations with Congress, and has Utah's pledge to support it.

It is unnecessary to quote the Territorial law in full. The following points of interest will be noted:
First. The law located the College in Cache County.
Second. $25,000 were given to erect a college building and to purchase land.
Third. The Governor and Secretary of the Territory were made, with the Assessors of Cache, Davis, Utah, Salt Lake, and Sanpete Counties, ex-officio Trustees of the College. By a decision of the Supreme court, of a general character, it was held that the power of appointment is vested in the Governor and the Council, and not in the Legislature. The present Board of Trustees was appointed under this decision.
Fourth. The objects of the College were defined by the territorial law in the language of Congress already quoted. In the same manner the objects of the Experiment Station were defined. The Territory is in full accord with the terms of the Congressional grant.
Fifth. Section 10 is quite important and will be given in full. With this section the management is in most hearty accord. Positive assurance is hereby given to the public that there will be a faithful discharge of the duties devolving upon those in authority, touching this portion of the law.

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

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

Seventh. The length of the course was made not less than nine months. Students must be, by law, fifteen years of age to enter the institution. This, doubtless, as in other states and at other colleges, means admittance to the collegiate course, and is not intended to bar younger students from any prelimi-
nary studies necessary to admit them to the full collegiate course.

LOCATION OF THE COLLEGE.

Logan and Cache county gave a farm of 100 acres and thereby secured its location. Logan is the capital city of Cache county, and in a commercial sense, of Cache valley. It is surpassed in wealth and population by only three cities of Utah, and in the beauty of its location by none. Cache valley is some sixty miles in length, twelve miles in width, and is completely surrounded by the Wasatch range of mountains. From the upper bench of the old lake formation, upon which the College and farm are located, can be seen, in the clear air of this inter-mountain region, the full expanse of the rich valley in which it is located throughout its entire length, while the uniquely corrugated mountain sides encircling the valley are seen in all their wealth of varied beauty. The College is located at the visual key of this unique and picturesque valley. The beauty of its location is probably unsurpassed by that of the location of any other college in the country.

COLLEGE EQUIPMENT.

One hundred feet square of the College building, constituting one of the wings, is now completed and ready for use. The frontispiece will show that it is a modern building of pleasing exterior. This wing includes eight lecture rooms, a chapel, rooms for domestic arts, and a light and roomy basement that will be used for the time being for mechanic arts.

The last Legislature gave the College, in addition to the sum necessary to equip the farm with buildings and appliances, and to pay a corps of instructors, $9,000 for equipping the college building for its illustrative work, with a library, desks, cases and apparatus for teaching in the several courses. Students will, therefore, have the advantage of a modern and effective equipment for the first two years of the college existence.

Under the presentation of the several courses, will be set forth the advantages of each.
COLLEGE INSTRUCTION.

The existence of the Agricultural College of Utah rests upon the development of the sciences as unfolded in the immediate past. Its distinctive work will be, in addition to giving a liberal education, the teaching of these sciences, and the pointing out, as far as possible in school life, by actual manual exercise and by the use of apparatus and of materials and agencies used in the arts, their application to industrial life. This work evidently requires men of special experience and instruction. The instructors will all be specialists of a high order of attainment in their several fields of instruction. It is intended that the work undertaken at this College shall be well done and comparable with the better colleges of the country.

COLLEGE COURSES.

The College work will cover four distinctive lines of instruction, and three special courses.

1. Course in Agriculture.
2. Course in Domestic Arts.
3. Course in Mechanic Arts.
4. Course in Civil Engineering.

The special courses will be as follows:

1. Three years' course in Agriculture.
2. Course in Mining Engineering.
3. Irrigation Engineering.

If a demand is developed, a winter course of lectures in Agriculture will be given. This course will be for young farmers and other interested parties, and will cover from one to three months.

The courses in Mining and in Irrigation Engineering will be Post Graduate Courses of one year each.

PREPARATORY DEPARTMENT.

The state of development of our public schools seems to require, for a few years, a preparatory department of one year for the fitting of those students who are unable to pass an examination for entrance to the college courses. This, it is hoped, will be a temporary necessity.
COURSE IN AGRICULTURE AND SCIENCE.

It has been said by a great poet that "All nature is but art unknown to thee." This being so, agriculture is the art of arts, for it unceasingly deals with nature and is thereby brought daily into contact with life and the sciences related to life. In the management of soils and in the use of tools it comes in contact with physical and mechanical laws, and in the markets, with commercial and political laws. Very happily agriculture deals with more of the sciences than any other industry, thereby causing agricultural education to become more nearly a liberal education than that necessary to any other industry, or as it is often called, profession. Very nearly the round of natural sciences are involved, so that a well educated farmer is virtually liberally educated as a citizen.

In the following course of instruction very few studies are involved that are not an essential part of the education of a man best equipped to become the most successful farmer. It may well be termed a course in the applied sciences.

Henceforward agriculture has been without guiding laws. It has been a "rule of thumb" business. It is now rapidly becoming the most learned of the industries or professions. Of its profundity there can be no longer any doubt. The inherent fascination of its living forms and of its complex and intricately balanced laws will yet attract the best talent to it as the finest field for industrial gratification and for the development of the highest order of intellectual and physical manhood.

Statistical inquiry has shown that in the several countries of Europe the produce per acre is increased over the most iliterate countries by the ratio of the population that can read and write. The same fact is found to exist between the states of the Union. A single illustration of the general law will be given. In 1860, fifty-three per cent of the population of France and nearly all of the population of Germany, could read and write. In the former country the crops were 18.50 bushels per acre while the latter yielded 22.05 bushels. Germany has a poorer country for agriculture than France yet her yield is nearly twenty per cent more than that of France. She has far more Agricultural Colleges and Stations and erected them earlier than did France.
THE PREPARATORY CLASS.

The Preparatory Class continues for one year and fits students for the several courses of college studies.

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>SECOND YEAR</th>
<th>THIRD YEAR</th>
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<tbody>
<tr>
<td>Reading and Orthography.</td>
<td>Drawing.</td>
<td>Physical Geography.</td>
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</tbody>
</table>

MILITARY SCIENCE.

The United States details a West Point graduate to take charge of this department. As yet this officer has not been detailed, but it is expected that he soon will be. The purpose of this special work is not that of educating students fully in the art or science of war but is intended to give them sufficient instruction to equip them for service in case of emergency.

It is of great value to the States and to the nation to have scattered throughout the country, men capable of drilling and organizing their neighbors for service.

COURSE IN AGRICULTURE.

FRESHMAN YEAR.

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<tr>
<th>FIRST TERM.</th>
<th>SECOND TERM.</th>
<th>THIRD TERM.</th>
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<tbody>
<tr>
<td>Composition and Rhetoric.</td>
<td>English.</td>
<td>English Literature.</td>
</tr>
<tr>
<td>Shop work and Military Science.</td>
<td>Practice in Physical Laboratory.</td>
<td>Chemistry.</td>
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</table>

SOPHOMORE YEAR.

| Horticulture.               | Horticulture.                    | Horticulture, Forestry and Bee-keeping |
| Chemistry.                  | Agricultural Chemistry.          | German or French.                |
| German or French.           | German or French.                | Geometry 4.                      |
|                             | Laboratory Practice in Chemistry. | Industrials.                     |

Continued on next page.
### JUNIOR YEAR.

<table>
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<tr>
<th>FIRST TERM.</th>
<th>SECOND TERM.</th>
<th>THIRD TERM.</th>
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<tbody>
<tr>
<td>Agriculture.</td>
<td>Agriculture.</td>
<td>Agriculture.</td>
</tr>
<tr>
<td>Farm work.</td>
<td>Laboratory practice in Botany.</td>
<td>Farm work.</td>
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</tbody>
</table>

### SENIOR YEAR.

<table>
<thead>
<tr>
<th>Agriculture.</th>
<th>Veterinary Science 3.</th>
<th>Agriculture.</th>
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<tbody>
<tr>
<td>Mental Science 2½.</td>
<td>Astronomy.</td>
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<tr>
<td>Farm work.</td>
<td>Laboratory work.</td>
<td>Optional study.</td>
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</table>

### DEGREE.

All students who complete the course and pass a satisfactory examination will receive the degree of B. S. (Bachelor of Science.)

### GENERAL NOTES ON ABOVE COURSE.

Those who enter college from the Preparatory Department will receive one year's drill in English Grammar, and one year more in English during the regular course. This time and the time devoted to Political Economy, Logic, Mental Science, History and the United States Constitution, coupled with the sciences and time devoted to the library, will so far develop the taste for that class of reading which informs and disciplines the mind for the proper discharge of effective citizenship, that the graduate of the course will become well equipped to enjoy the book of nature surrounding him, the society of man, and to represent the interest of the class that this course seeks to promote. It is said that the chances of a college graduate for high honors in the country are multiplied two-hundred fold by a collegiate training. The college does not seek to train statesmen but to fit young men taking this course for effective farmers and as representative citizens. It is well known that farmers have few representatives of their
class in National affairs and that their interests have never been effectively protected.

SHOP WORK.

About a year of time in daily exercises of one to two hours each will be devoted to work at the bench with wood and at the forge with iron. Skill in handling ordinary carpenters' tools and in common blacksmith work at the forge will be acquired that will excel that of ordinary workmen. Habits of accuracy and perfection in details of work will be acquired that will remain as a force that will color all of after life. The design is to acquaint young farmers with the manipulation of tools and with some of the principles involved, for their own use on the farm. This work has been found one of the most popular and useful labors of the courses in agriculture.

FARM AND HORTICULTURE WORK.

It will be observed that throughout the four years' course the laboratory practice in physics, botany, chemistry and veterinary science, military drill, shop work and in labor on the farm and on the horticultural grounds keeps students in daily exercise. This is found to be a potent way to retain a love for an active physical existence, which it is often claimed is lost during college life by the old system of education, while at the same time it secures health and vigor to the students.

The work on the farm and in the Horticultural Department, while largely for the purpose of illustration, and to gain familiarity with the methods pursued, is in part for physical culture. Young men desirous to work beyond the required time, will be compensated for their services when they are needed.

MEANS OF ILLUSTRATION.

Laboratories.—The Chemical, Physical, Botanical, Veterinary, Agricultural and Horticultural Laboratories and museums will contain $2,500 worth of newly purchased means of illustrating the class room teachings. Already the College has secured from Prof. M. E. Jones, 800 species of the flora of Utah
for the Botanical Laboratory. The Chemical Laboratory of the Experiment Station will be equipped at a cost of $2,000.

Library.—A library of some 1,500 volumes will be available for use.

Horticultural Grounds.—Twelve acres will be completely covered with products designed to illustrate school room teachings and for research. (See Experiment Station.)

EXPERIMENT STATION.

It has been noted that the Experiment Station is endowed by an annual gift from the Government of $15,000, which sum is to be applied strictly to the purposes of research in the interest of farmers. This work is the most valuable work that could be carried forward for the purpose of school room illustration. The Station equipment consists of a model

Farm House. This house is new and modern in its conveniences. It contains a fine dairy room fitted up with modern dairy conveniences.

Farm Barn.—Nothing is hazarded in saying that no college barn in the country exceeds, indeed if any equals it, in its array of conveniences for labor saving.

Chemical Laboratory.—This is to be a fine building, fitted solely with reference to Station work.

The Farm.—On the farm proper there are some three hundred plats laid out for investigation. These cover time of irrigation, amount of water to use, sub-irrigation, night versus day irrigation, method of fitting ground for irrigation and other irrigation trials. They include trial of varieties of wheat, corn, oats, barley, forage crops, mulching, drilling against broadcasting, method of tillage, time of tillage, depth of tillage, several methods of plowing, no tillage, depth of planting, distance of planting, time of sowing, amount to sow, selected seed, time of harvesting, chemical fertilizers methods of manuring, varieties of grass for hay, varieties of grass for pasture—to be tested by actual grazing trials, mixed grasses for pasture, several crop rotations and soil studies.

When the barn is completed a large series of feeding trials with cattle, sheep, horses and hogs will be entered upon. Other work is in view and will soon be entered upon.

Horticultural Department.—In this Department will be found a series of the most important economic trees that have
been introduced by the Station for test. One hundred varieties of apples, many of pears, peaches, plums, grapes, strawberries, raspberries, blackberries, potatoes, vegetables of the various sorts and a line of other work, are on trial.

**Chemical Department.**—The Chemist of the Station will carry forward a large amount of chemical work in plant, and in animal life, on soils, etc.

It is believed that the Agricultural College of Utah is equipped for first class work and will compare favorably with similar institutions in other states.

The Bulletins of the Experiment Station will be sent free to any one asking for them.

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**PAPERS AND LECTURES.**

A Reading Room will be well supplied with papers suited to the wants of the several departments.

Lectures by members of the Faculty and by distinguished speakers from abroad, will be given in the Chapel of the College.

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**THREE YEARS' COURSE IN AGRICULTURE.**

**FIRST YEAR.**

Same as Preparatory year. (See Preparatory Course.)

**SECOND YEAR.**

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<th>FIRST TERM.</th>
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<tbody>
<tr>
<td>English.</td>
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<td>Agriculture.</td>
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<tr>
<td></td>
<td>Shop work.</td>
<td>Farm work.</td>
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**THIRD YEAR.**

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<tr>
<td>Agricultural Chemistry</td>
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<td>Veterinary Science.</td>
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<tr>
<td>Botany.</td>
<td>Shop work.</td>
<td>Trigonometry and Surveying:</td>
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<tr>
<td>Horticultural work.</td>
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<tr>
<td>Horticulture.</td>
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<td>Agriculture.</td>
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</tr>
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<td>Botany.</td>
<td>Political Economy.</td>
<td>Trigonometry and Surveying:</td>
</tr>
<tr>
<td>Horticultural work.</td>
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This work is intended for those who cannot or will not afford the expense of a full course. It is a business course in Agriculture. It is framed on the same plan that courses in law and medicine are, as a purely technical course, and is intended, as they are, to furnish economic or practical, or as it is known, technical information. English Grammar is made an exception, as is the first year of the course. The first year furnishes a small degree of preparatory fitting, without which no student would be prepared to study or learn in the field of agriculture, as its abstruse sciences require some preliminary training.

**WINTER LECTURES ON AGRICULTURE.**

As a preliminary trial or test of the public demand for such a course of lectures for farmers, a month's course of lectures will be inaugurated at the opening of the winter term in 1891, provided there are ten applications for admittance to the course. These lectures will be open to everybody free of charge, and without examination touching educational qualifications. The ground covered will be that alone of practical work, such as stock feeding, farm crops, breeding, tillage, diseases of animals, chemistry applied to agriculture, insects injurious to vegetation, horticultural topics, etc.

Application should be made two or more weeks in advance of the opening lectures.

No degree will be attached to either course, although a certificate stating the fact of honorable completion of the three years' course will be given.
COURSE IN DOMESTIC ARTS.

Except in the hours devoted to shop, farm or horticultural work, the course for young women will be the same as for young men in the four years' course of agriculture. There will be some fifteen terms of one lesson daily, wherein the course for young women will not run parallel with that of the young men. This time will be devoted to special work adapted to their sphere of life. Co-education is now very widely recognized in the higher as it has been in the lower schools. No adequate reason can be assigned for denying women a share in the benefits of this public bequest. Once admitted into the institution, their right to special consideration in making up the course of instruction is as clear as that of young men. For this reason, if for no other, special attention will be given to those branches of information in which young women require technical proficiency, and to those studies that tend to adorn life in the sphere in which they most move.

SPECIAL STUDIES FOR YOUNG WOMEN.

Cooking.—The chemistry, or science, and the art of cooking will be taught. Exercises in cooking in application of school room teachings will be a regular feature of the work. Not only will the students be required to cook, but to arrange the table for guests and to preside over it.

Cutting and Sewing.—Cutting and sewing will also receive special attention. The value of this art in householding is too apparent to need commenting upon.

Dairying.—Butter and cheese making is a fine art. Milk is one of the most complex and unstable compounds known in the whole range of farm life. In no other field of farm economy is the product so irregular and with results so unfortunate. The problems involved are very complex and interesting. Very decided attention will be given to this most important field of woman's general care. Fortunately, the more exacting work of the dairy now falls to other hands. While this is true, the necessity of mastery by woman of the philosophy
and art of butter making was never greater than now, wherever butter is made on the farm.

Hygiene.—A special course of lectures will be given to the young women of this department.

Belles-lettres.—A special course of instruction will be given the young women in what is known as polite literature, including elocution.

Music and Painting.—A competent instructor in Music and Painting will be employed, giving the opportunity to acquire these graces free of charge. They will not be compulsory studies, but will be encouraged for those who have the taste and talent for their acquisition. Other provisions will be made for those not desiring to devote their time to them.

French.—French will be taught the young women instead of the German of the regular Course in Agriculture. German has been placed in the Course in Agriculture, as Germany is the home of Agricultural Colleges and Experiment Stations. The German language is richer in agricultural literature than that of any other language, hence it is placed in the Course in Agriculture.

Horticulture.—Horticulture has a fascination for all classes of our population. Man has an intuitive or inherent love of nature. Her living forms everywhere claim the admiration and almost the affection of every cultivated or refined man or woman. Horticultural and household plants are varied; are very plastic in our hands, and are either beautiful or useful. In either case they minister to our pleasures. Household plants and the farm or the village garden are always objects of interest and of importance to women, and often the source of physical health, inducing, as they do, frequency in the open air. This does not necessitate the added drudgery of physical work in the garden any further than pleasure may dictate.

The growing taste for this refined field of agriculture, warrants the devotion of some time on the part of the young women to the principles and practices of at least a restricted field in horticulture.
MILITARY DRILL FOR YOUNG WOMEN.

By an oversight the following remarks regarding Military Drill, were detached from the matter already given on the subject:

This Department of instruction has become very popular in college life. It takes the place in many colleges of Calisthenics, and is found to be a most valuable method of securing physical culture. It gives an erect carriage, ease and grace of bodily movement, and habits of discipline and order. The influence of military drill is soon visible on those taking it.

The marked advantage of this practice to young men has led several colleges to extend it to young women with the most happy results. The spear, light rifle, or some other light weapon is usually carried. The young women of this college will have the advantages of this feature of college instruction.

IMPOR TANCE OF DOMESTIC ECONOMY.

Modern Household Economy and Home Keeping is rapidly broadening out into a wider field. Its plane of existence has been greatly elevated, and is still being lifted to a higher and wider sphere, well worthy of all the powers of woman. This department is based upon the belief that the home is a vital force in the development of broad culture and of a sound and noble social, moral, political and economic existence for man. It is believed that the science and art of Domestic Economy is a broad one in its social and economic phases, and requires talent of a high order. Certainly in no field is the power of refinement more potent and pleasurable. There is no other of equal importance.

This course will have the friendly care of those to whom it is committed.
THE AGRICULTURAL COLLEGE OF UTAH.

COURSE IN MECHANICAL ENGINEERING.

The growth of modern industrial arts springs from recent development of the sciences. Their pursuit rests, then, upon a knowledge of all the laws involved. This implies a systematic study of related sciences. The value of general intelligence and of mechanical skill finds striking illustration in the marketing of American mechanical productions in India and other countries where labor is but one-twentieth of the rates paid here.

It is believed that the effect of a strong department of Mechanical Engineering will be, through its graduates, to stimulate the development of the mechanical industries in this Territory. The presence of masters of the science of mechanics and of men trained to a high order of skill in the art of mechanical construction, can but result in elevating the character of our mechanical industries.

The instruction in this school is in response to a popular demand for such a course, as witnessed wherever such a course has been organized. No department of instruction at industrial colleges is now as popular as that of mechanical engineering. As in the school of Agriculture and of Domestic Arts, skill in application will be acquired wherever the principles taught will admit of it. To this end Work Shops will be fitted up for work in Wood, for Forge Work, for Vice Work in Iron, for Molding, etc. Students will be given lessons in handling Engines, Boilers and other machinery. In addition to imparting skill in the manipulation of materials, instruction will be given in the underlying principles of the mechanical structures and trades involved. The object will be constantly kept in view, of training thinkers and not mere routine manipulators—men who will have constructive and inventive talent.

A principal for this department has not as yet been selected, so that it is not deemed best, until such selection is made, to lay down a rigid course. A master in this field will be secured, and an equipment furnished that will secure the objects sought. The following is an approximate outline of the work proposed:
COURSE OF INSTRUCTION.

FRESHMAN YEAR.

Practically the same as in the Course in Agriculture, save that special attention will be given to Shop Work.

SOPHOMORE YEAR.

The instruction will vary from the Course in Agriculture mainly in Shop Work and Drawing.

JUNIOR YEAR.

The work of this year will include two terms of Physics, including especial attention to Electricity and Magnetism, Trigonometry, Geometry, Geology and Lithology; three terms of Mechanical Drawing, Pattern Making and Molding, Vice Work in Iron and Steel, Principles of Mechanism and Heat, Analytical Mechanics, etc.

SENIOR YEAR.


DEGREE GIVEN.

The degree of M. E. (Mechanical Engineer) will be given.

COURSE IN CIVIL ENGINEERING.

The purposes of this course need no explanation in a territory pre-eminently requiring the services of the Civil Engineer. The mining interests of Utah, the immense work to be done in irrigation engineering before the vast resources of water in the Territory are utilized, and the great work of a territory just ready to develop its varied resources, fully demand this course in an industrial college for its people.

FIRST YEAR.

The first and second years will run parallel with the Course in Mechanical Engineering.
THIRD YEAR.

The third year will contain more of Mathematics and less of Physics and Machine work and Designing, than the Course in Mechanical Engineering.

FOURTH YEAR.

The fourth year will include Surveying and Sanitary Engineering, Mechanical drawing, Analytical and Graphical Statics, Steam Engine, Stereotomy, Principles of Mechanics, Roads and Pavements, Engineering Designs, Mechanism of Engineering, Geodesy and other technical work; also Astronomy and Political Economy.

MINING AND IRRIGATION.

A year each will be given to Mining and Irrigation Engineering in addition to the regular Course in Engineering. The present wealth and the future prospects of Utah rest largely upon mining and irrigation. It is believed that this department of instruction can be made to serve the material interests of Utah to an eminent degree.

When we consider the vast debt due to engineering in countries where irrigation is far more nearly perfected than it is here, when we reflect upon the great opportunities for water storage, the great waste of water under the present system and the probable near approach of the time when the forces of nature will be used in raising and controlling irrigating waters, it is plainly the evident duty of the College to foster this science as far as it possibly can. The possible productive power of the water falling upon our water sheds it is believed, and probably justly so, is far greater than is ordinarily apprehended. The extensive mineral resources of the Territory will, in their future development, sustain a large and prosperous population. This population will call for the full resources of all of the land in our valleys. This in turn will stimulate the husbanding of the water resources.

This School seeks to educate men within its own borders who will be capable of developing this vital interest.

DEGREE FOR COURSE IN CIVIL ENGINEERING.

On the satisfactory completion of the course in Civil En-
gineering, the degree of C. E. (Civil Engineer) will be conferred.

TERMS OF ADMISSION.

All students admitted to the College must be fifteen years of age. This requirement will not be enforced for the Preparatory Department. Students must furnish for entrance to both the Preparatory Department and the College Courses, when required, evidence of good moral character.

COLLEGE CHARGES.

Tuition will be free. Five dollars will be charged as an entrance fee for each year of the College Course. For a single term for irregular students the charge will be three dollars. This sum is in lieu of the charges ordinarily made at colleges for library and other fees, so that the Library, Museums, etc., will be free to the students.

In the Chemical Laboratory and Workshops the students will be charged for the cost of the materials actually used up by them in their exercises. This charge will of course be only for the terms when the materials are used. This sum will amount to only from $2 to $3 per term.

REQUIREMENTS AND DISCIPLINE.

Daily attendance at Chapel Exercises may be required. These exercises will be wholly devotional and completely unsectarian. It is expected that they will be conducted in part by members of each of the churches represented in Logan, but wholly as worshippers.

Students will be required to take four full studies, unless excused from them by the Faculty.

Prompt attention to all duties assigned to them will be required of each student. Gentlemanly deportment towards all with whom they come in contact, whether of the Faculty, fellow students or citizens, will be expected. Any failure in this direction will become a matter of record and of decided Faculty action when this aggregate reaches a given standard.
THE AGRICULTURAL COLLEGE OF UTAH.

CLASS GRADES AND ABSENCES.

Class standing will be kept. Failure to attain 60 will be a failure to pass in the study involved.

Absences from class recitation or from any other assigned duty will become a matter of record. Excuses will be rendered for class absences to the Professor in charge of the class from which the student has been absent, and for absences from Chapel or other assigned duties of a general character, to the President.

EXAMINATIONS.

Examinations for admission to full College Course will cover Arithmetic, Elements of Grammar, Geography, and the elementary branches taught in our common schools.

Students passing in the Preparatory Department will be admitted to the College Courses without further examination.

CATALOGUES.

The College Catalogue will be sent to any one requesting a copy.

All Bulletins of experiment work performed at the Experiment Station will be forwarded free to any address desiring them.

DIRECTIONS TO STUDENTS.

1. Logan is reached over the Utah Northern R. R., which runs two trains each way daily.

2. New students will first present themselves for examination to the Professors of English and Mathematics. Examinations will occur on the first and second days of the opening of the term.

3. After passing examination, pay the entrance fee to the Treasurer and obtain his receipt for the same.

4. The Treasurer's receipt is taken to the Secretary of the Faculty, who will enter the name upon the College roll.

5. The Secretary will furnish the students a matriculation card. This card will be presented to the Professors of the several classes in which students desire to be enrolled. These teachers will place the name on their class rolls and give all further advice needed to enable the student to be properly prepared to start with his classes.
SPECIAL NOTICE.

The first two years of the college courses only, will be open this fall for admission of students.

It is assumed that very few, except those who have fitted for the last two years in this College by taking the first two years, will desire to enter for the final years of the college courses. If this assumption is correct, then it will be two years before the students of this College will be prepared for the concluding years of the College Course. When the students of the first and second years reach these last two years, a full corps of instructors and an equipment will be organized to carry them forward with their work.

TO INQUIRERS.

For further particulars address the Secretary or the President of the College.

Since the above was written Prof. J. M. Sholl, M. E., has accepted the Professorship of Mechanic Arts and of Mathematics.

The Rural New Yorker, of New York city, offers to pay the expenses, except clothing, of students in the college for certain services to be performed in securing subscriptions.
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