

30.71  
Dr 3  
886/88  
c.3

Oregon State Library

CURRENT  
COLLECTION

CON  
ECTION

# FIFTEENTH BIENNIAL REPORT

OF THE

# Oregon State Agricultural College,

TO THE

LEGISLATIVE ASSEMBLY.

# DISCARD

FIFTEENTH REGULAR SESSION.

1889.



SALEM, OREGON:  
FRANK C. BAKER, STATE PRINTER.  
1889.



# FIFTEENTH BIENNIAL REPORT

OF THE

## Oregon State Agricultural College

TO THE

LEGISLATIVE ASSEMBLY.

---

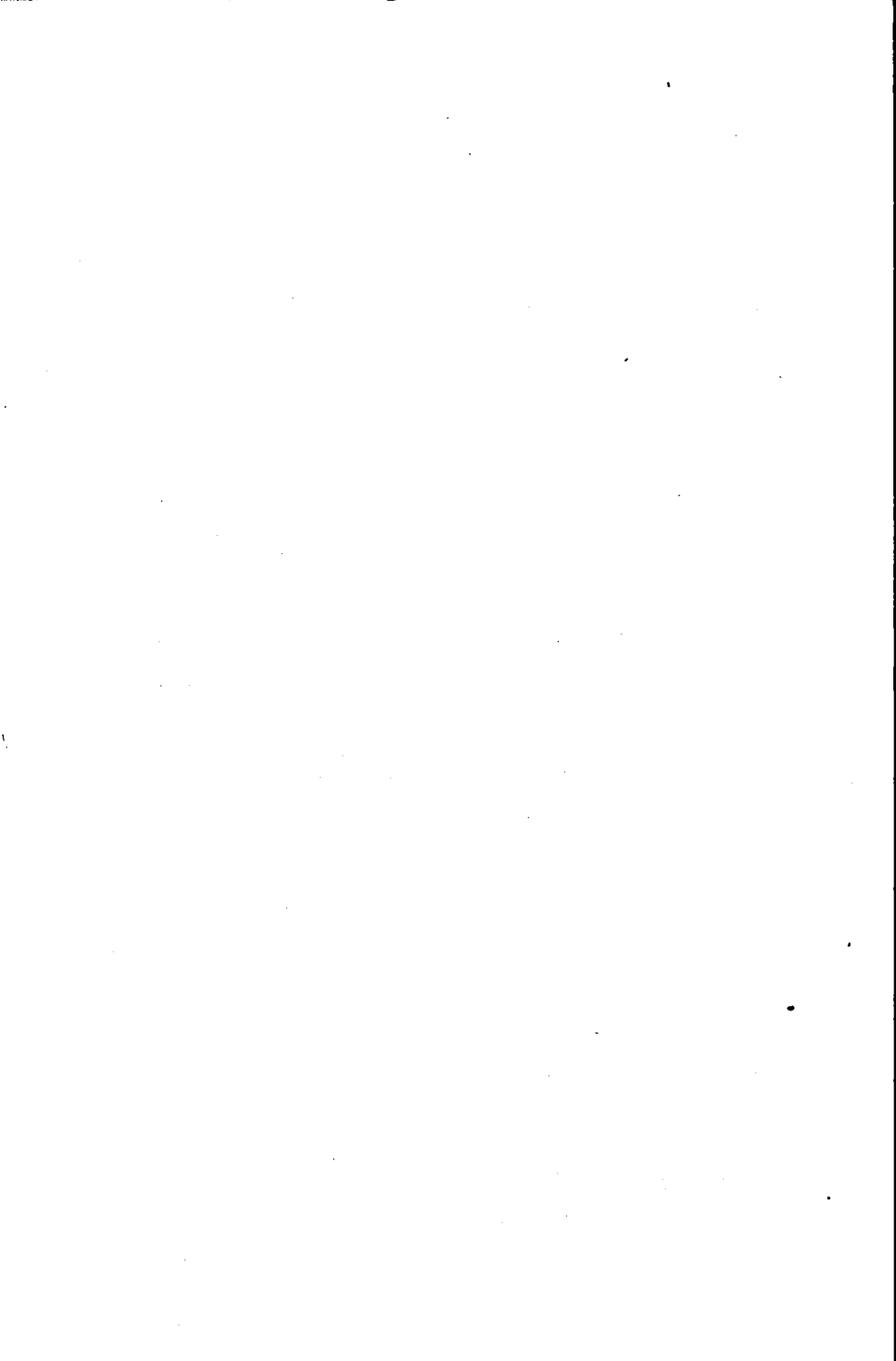
FIFTEENTH REGULAR SESSION.

---

1889.



SALEM, OREGON:  
FRANK C. BAKER, STATE PRINTER.  
1889.



STATE AGRICULTURAL COLLEGE, }  
CORVALLIS, OREGON, December 28, 1888. }

*To His Excellency, Sylvester Pennoyer, Governor of Oregon :*

SIR: I have the honor to transmit herewith the reports of the president of the board of regents of the State agricultural college of Oregon for the years 1887 and 1888.

Very respectfully,  
WALLIS NASH,  
Secretary.



# REPORT.

---

STATE AGRICULTURAL COLLEGE,  
CORVALLIS, OREGON, December 28, 1888. }

*To His Excellency, Sylvester Pennoyer, Governor of Oregon:*

SIR: Although the law constituting the present board of regents was approved on February 11, 1885, and the amendatory Act on November 21, 1885, yet under the conditions of those laws the board of regents did not, and could not, assume the control and government of the college until the second day of July, 1888. It is true that various meetings of the board were held at intervals between the times that the several members of the board received their commissions from your excellency, and the second of July, 1888. Those meetings had for their objects, first, to obtain the provisional conveyance to the board of the college farm from the former trustees, who were the custodians of that farm for the State agricultural college, but who, for executing that trust, were the agents and nominees of the South Methodist Church; and, second, after such conveyance to the State board of regents had been duly made and accepted, to organize and carry out the necessary legal measures to defend the right of the State of Oregon in and to the agricultural college farm against the attempt of certain individuals claiming to be members of the South Methodist Church, and to act on behalf of themselves and other members of that church to dispossess the State board of regents and to nullify the deed conveying the farm to the State board.

That claim took the form of a suit in equity brought in the circuit court of the State of Oregon for Benton county.

Under the advice of the able counsel, instructed by the State board, a demurrer was interposed and was sustained by Judge Bean in an exhaustive opinion.

Meanwhile the citizens of Benton county had proceeded, in good

faith and in reliance on the deed of conveyance of the college farm to the State board, above referred to, to comply with the provisions of the legislative Acts of 1885, and to erect on such farm a substantial and very commodious and suitable brick building at a cost of upwards of \$23,000.

The conditions of the Acts having thus been complied with, by the conveyance of the farm to the State board of regents, and by the erection thereon of a building which abundantly filled the requirements of the law, you, as Governor of Oregon, accepted the building, after a full personal inspection of the same, and placed the State board of regents in possession by handing them the keys of the college.

The plaintiffs in the Church suit subsequently obtained, on appeal to the supreme court of Oregon, a judgment reversing Judge Bean's sustainment of the demurrer filed by the State board. If the judgment of the supreme court is confirmed on the rehearing which has been applied for and granted, no alternative will remain for the State board but to continue the litigation on the merits of the case until a final judgment is rendered.

The State board of regents believe, and are advised, that the courts of law, and not the legislature of Oregon, present the proper forum for ascertaining whether the Southern Methodist Church or the State of Oregon is entitled to the control and management of the State agricultural college, and to the ownership of the college farm originally bought by its donors, and conveyed for the perpetual benefit of the State agricultural college.

But the State board of regents, appointed by the Governor of Oregon, confirmed by the senate of Oregon, and assuming to act in strict accordance with the laws of 1885, would consider that they were wanting in their duty to the State and to its citizens, if they failed to protect to the best of their ability the ownership of the State of Oregon in the property conveyed to them—the college building erected by the public spirit and liberality of Benton county, and the State agricultural college and all that belongs or is attached to it.

It is well to call to mind, before leaving this subject, that the surrender of the agricultural college to the State of Oregon, and the conveyance to the State board of regents of the college farm, were voluntary acts on the part of the Southern Methodist Church, which became fixed and binding forever on all parties—according to the opinion of the State board of regents and their counsel—when finally acted on and crystallized in the legislative Acts of 1885, and



still further confirmed, in all good morals, by the Benton county subscriptions and the erection of the new building.

A reasonable appropriation will be asked from the coming legislature to defray the expenses of this litigation in defense of what are believed to be the rights of the State of Oregon.

From the foregoing statement of facts it is hoped that it sufficiently appears that the State board of regents were in the plain line of duty in accepting, on July 2, 1888, the control and management of the State agricultural college in the terms of the law governing their appointment. Some months prior to this last mentioned date your excellency, as Governor of Oregon, had designated the board of regents of the State agricultural college as the authority to receive, on behalf of the State of Oregon, and to disburse the funds appropriated by congress by what is known as the Hatch Act, constituting experiment stations in the several States and Territories, and appropriating for each State and Territory the sum of \$15,000 per annum.

The State board made the necessary application to the United States treasury for payment over of these funds. They were assisted in their effort by the Oregon delegation in congress, and in this connection Senator Dolph must receive special recognition and acknowledgement for the aid he rendered. After much correspondence the treasurer received on April 25, 1888, the installments then payable of the first year's appropriation, amounting to \$11,250.

The board proceeded as soon as they could to organize the experiment station and to appoint the necessary officers. When dealing later on with the progress of the work further mention will be made of what has been done already, and of the plans of experiment laid down for the future for our Oregon station under the Hatch Act.

Early in the month of June, 1888, the State board were notified by the building association (an organization formed by the subscribers to the building fund of the new college) that the college was rapidly approaching completion, and would be ready to be handed over to the State in a short time. Your board consequently were summoned to meet at Corvallis, and eleven out of the thirteen members responded to the call.

Committees having been appointed on nomination of faculty and on course of studies to be adopted, and having duly reported thereon, the plan of study was selected, which appears more fully in the report of the president of the faculty, which is attached hereto. In framing this most important plan special care was taken to conform to the law under which the Oregon State agricultural

college was organized, which enacts, as the particular features of the teaching in such colleges, instruction in "agriculture and the mechanic arts." In laying down this plan of work the State board were well aware that they were laying a broader foundation than the means at their command would enable them to build on at first. With the amount of income at their disposal it is not practicable, now, to find means to pay professors and instructors in all the studies proposed, and to meet this difficulty for the present the several members of the faculty have undertaken more work and a wider range of subjects than the special subjects for which they were engaged would call for. Fortunately the income of the institution is a yearly growing one, and the board will seek to widen the usefulness of the State agricultural college as the funds will permit.

The board know that in all such colleges there is now, and probably always will be, a just balance to be sought between what are known as the theoretical and the practical sides of the education there offered.

Fortunately they are not pioneers in this matter, and need have recourse to few experiments. The experience of all agricultural colleges of the United States, as well as those in Canada, and in several European countries, has brought out various principles which it is safe to follow, and which the State board of regents have endeavored to follow in the plans they have laid down for the Oregon college.

The first is that agriculture is a science, and not an art, and must therefore be taught on scientific principles. That is to say, that the farmer deals with natural forces in the soil, in the atmosphere, and the products of the farm, both animal and vegetable, and that he cannot secure the best results from his farm without such a thorough and systematic training in the natural sciences as will teach him to use the forces nature has provided there for him. In other words, science must teach him *what to do*.

The second principle is that this scientific teaching is the foundation on which practical results must be built up, that therefore actual experimental knowledge of the processes of the farm is just as needful as the scientific training which must both precede and accompany it. Good practical experience must teach the farmer *how to do it*.

The success of any agricultural college must depend on the wise and careful application of these principles. It can now be determined if the present board of regents have judiciously used the experience of precedents of other such institutions in laying down the

organization of the college. It remains to be seen if they have shown good judgment in the selection of a faculty for carrying these ideas into practical working.

If their plans and ideas are approved, the coming legislature of Oregon will, it is earnestly hoped, strengthen their hands and help the carrying out of their purposes by appropriations of the public funds to enable them to provide the means of extended usefulness for the college. And, if experience should prove that changes in the faculty are needed for the good of the college, the board of regents will make such changes fearlessly, and with a single eye to the advantage of the students.

It must not be forgotten that it is too early to look for results as yet. A certain amount of indecision and friction is absolutely inevitable when a body of teachers is collected from all points of the compass and set down to teach a large collection of students, to whom everything is, of necessity, strange. The board congratulate themselves that so short a time as that since the middle of September, 1888, has served to settle matters into so satisfactory a condition of hard and creditable work. The report of the treasurer will show what funds have been received and how expended.

Referring again to the Hatch law, the sum of \$15,000 in all has been received by the treasurer. The law authorizes the expenditure of one-fifth of this amount on buildings. The board of regents have utilized this sum in completing and fitting up in the college building chemical and botanical rooms and laboratories. The balance of the appropriation for 1888 the board apportioned among the several departments, in accordance with carefully considered plans. They have called on the various officers for suggestions for future work, and only wait to know that congress has generously renewed the annual appropriation, to inaugurate the operations of the coming year. This work will embrace the opening of branch stations in various parts of Oregon, where special experiments, having reference to the exigencies of the different sections of the State, will be carried on. Of course it appears from this report that the work up to this time is largely that of organization.

The college building at Corvallis, and the farm of 35 acres on which it stands, may be considered to afford the means for the scientific teaching to which reference has been made. But only to a limited extent can the practical work of the farmer, the dairyman, the stock raiser, and the horticulturist be carried on there.

The State of Oregon can supply, if she will, the means for establishing and working a model farm, and a model dairy in connection

with it. It is generally considered that not less than 200 acres more land is most desirable, if not absolutely essential to these ends.

There is every probability that suitable acreage can be obtained, at a moderate price, near to the college farm, and so situated as to afford the desired opportunities for learning to the students.

It is, perhaps, not improper to mention that there is hardly one progressive State which has not provided for its agricultural college the lands for its purposes. Among these States Illinois has given 400 acres for general and stock farming and 180 acres for an experimental farm, including 20 acres of ornamental grounds.

Iowa has given 895 acres; of this 130 acres is for horticulture and ornamental grounds, and 465 acres in actual model farm.

Kansas has given two farms, of 171 acres and 100 acres.

Massachusetts has given 383 acres; of this from 10 to 15 acres are orchards, and they have a nursery containing over 25,000 trees, shrubs, vines, etc.

Michigan has given 676 acres for farm and park, of which 270 acres are for the experimental farm.

And these are samples of the rest.

In order to give the students training in handicrafts, the other States have provided workshops, in wood and in metals, and have fitted up the same with costly machinery and tools, and so carried out the conditions of the original Act that education in the agricultural college should be given in the *mechanic arts* as well as in agriculture.

Oregon has not hitherto followed the good example of her elder sisters

In order to make the agricultural colleges complete and well fitted for their most important work, other States have made during the four years ending 1887 the following appropriations, the same being always entirely exclusive of all income derived from the land grants:

TABLE

Showing State appropriations for State agricultural colleges.

| State.             | 1886-7   | 1884-5 | Total.  | Remarks.                         |
|--------------------|----------|--------|---------|----------------------------------|
| Colorado-----      | 40,000   | 36,000 | 76,000  | Agriculture and mechanics alone. |
| Illinois-----      | 55,500   | 54,500 | 110,000 | All departments.                 |
| Indiana-----       | 60,500   | 45,000 | 105,000 | All departments.                 |
| Iowa-----          | 7,800    | 34,000 | 42,400  | Agriculture and mechanics alone. |
| Kansas-----        |          |        | 150,000 | For buildings only.              |
| Maine-----         | 34,600   | 12,400 | 47,000  | Agriculture and mechanics alone. |
| Massachusetts----- | 52,000   | 34,000 | 86,000  | Agriculture and mechanics alone. |
| Michigan-----      | 110,000  |        | 110,000 | Agriculture and mechanics alone. |
| Minnesota-----     | 75,000   | 58,000 | 133,000 | All departments.                 |
| Mississippi-----   | 50,000   | 65,000 | 115,000 | Agriculture and mechanics alone. |
| Nebraska-----      | *120,000 |        | 120,000 | All departments.                 |
| Ohio-----          | 30,000   | 44,950 | 74,950  | Agriculture and mechanics alone. |
| Pennsylvania-----  | *112,000 |        | 112,000 | Agriculture and mechanics alone. |
| Texas-----         | 35,000   | 30,000 | 65,000  | Agriculture and mechanics alone. |
| West Virginia----- | 40,000   | 33,000 | 73,000  | Agriculture and mechanics alone. |

\*And over.

Other States have done well, but their reports are not at this moment accessible.

Enough appears in the foregoing table to sustain the assertion that abundant examples and precedents exist to sustain the legislature of Oregon in adding largely to the annual appropriation of \$2,500 made by the last legislature for the benefit of the State agricultural college, if they are satisfied that the expenditure of the money appropriated will be wisely carried out.

The agricultural college of Oregon will not be fully equipped for her great work, and will not hold the same rank as the colleges of other States, which are not more than her peers in the great sisterhood, until the following outfit has been provided:

1. Mechanical building, with machinery for working in wood and iron.
2. Dairy—model creamery and cheese factory.
3. Stock barns, piggery, veterinary building with hospital and museum.
4. Horticultural buildings, herbarium and museum.
5. Model kitchen—appliances for preparing, preserving and evaporating fruits.
6. Students' hall and dormitories, with accommodations for not less than 200 students.
7. In the stock farm, representative and pedigree examples of the various breeds of cattle, horses, sheep and pigs.
8. In the horticultural department, orchards, nurseries and

experimental grounds for testing, improving and adapting fruit trees, vines, nuts and vegetables.

It is for some or all of these purposes that the considerable appropriations tabulated above have been made by other States.

Naturally the institution cannot expect all of these accessories at once. The work of development will depend on the wisdom and generosity of successive legislatures. But it is hoped that a substantial amount may be appropriated by this present legislature.

While all are desirable, some of these objects are really necessary now, and the board feel it to be their duty to give expression to their hope that they may be enabled to expend the following sums:

Four thousand dollars on a mechanical building; \$3,500 on machinery and equipment; \$2,000 on dairy, creamery, etc.; \$4,000 on stock barn, piggery, veterinary building and hospital; \$1,500 on kitchen, fruit canning and evaporating appliances; \$5,000 on dormitories and students' hall—total, \$20,000.

To this should be added \$10,000 for the purchase of lands, and then Oregon, with an expenditure on capital account of \$30,000 by the legislature of 1889, would still be only in the rank with West Virginia, Texas and Colorado, and not up in line with the older States.

It is hoped that besides an appropriation of not less than the \$30,000 above referred to, an appropriation of not less than \$5,000 per annum may be made in aid of the income of the college for payment of professors, teachers and current expenses.

No one can travel through Oregon who has lived in any one of the older States, or been made conversant with the improved methods in agriculture which are now in all but universal use, without recognizing the fact that the vast natural advantages of Oregon are not half utilized. What a vast increase will there be in the wealth of Oregon when her farmers are instructed in a few of the principles involved in rotation of crops and the general raising of the standard of the herds and flocks of the State. And the enlarged yield of the farm means more comforts in the home.

With the increased comforts of the home the attractiveness of the home to the boys and girls will correspondingly grow, and less will be seen of that tendency to forsake the farm and enter on the uncertainties of a business life, or still further crowd the professions, which is the too common complaint of the Oregon farmer of to-day.

It is no light or unimportant matter, then, to develop the usefulness of the State agricultural college in all these respects. Knowledge gained by study and tested and confirmed by experiment is what

the State agricultural college is framed and organized to extend and sow broadcast over Oregon by the influence of the college students, as they diffuse themselves among the farming community of the State.

The board of regents must now leave the matter to the wisdom of the legislature, of whose hands they crave a prudent, but yet generous appropriation, to enable them to provide things necessary and desirable for the high purposes this college is intended to fulfill.

Respectfully submitted,

W. S. LADD,

President of Board of Regents of the State Agricultural College of Oregon.

### ORGANIZATION.

The new building for the agricultural college having been completed by the citizens of Benton county and accepted by the Governor, as required by the legislative act of 1885, the State board of regents met in Corvallis on the second of July, pursuant to a preliminary meeting of the same body held June —, and organized both the experiment station and the college; organizing the college in accordance with the congressional Act of 1862, and the station under the Hatch Act. They established eight chairs or professorships and a preparatory department, adopted a curriculum, appointed a teaching staff for the college and a director for the station, and later during the summer they appointed a chemist and a horticulturist, who, with the directors, constitute the station council.

### DEPARTMENTS OF INSTRUCTION.

1. English language and literature.
2. Agriculture.
3. Chemistry and mineralogy.
4. Botany and horticulture.
5. Mathematics, surveying and engineering.
6. Modern languages.
7. Commercial law, physiology, elocution, mechanical drawing and free-hand drawing.
- 8. Household economy and sanitation.

### FACULTY.

B. L. Arnold, A. M., president and professor of English language.  
E. Grimm, B. S., professor of agriculture.

J. D. Letcher, C. E., professor of mathematics and engineering.

F. Berchtold, A. M., professor of modern languages.

W. N. Hull, A. M., professor of commercial law, physiology and mechanical drawing.

W. W. Bristow, A. B., professor of bookkeeping and bee culture; also principal of the preparatory department.

E. R. Lake, M. S., professor of botany, horticulture and entomology.

P. Herbert Irish, Ph. D., professor of chemistry.

\_\_\_\_\_, professor of household economy.

## COURSE OF STUDY.

### FIRST YEAR.

*Fall Term.*—English grammar, algebra, elementary chemistry, free-hand drawing, modern languages (elective), and an industrial.

*Winter Term.*—English grammar, algebra, U. S. history, agriculture, botany, elementary chemistry, free-hand drawing, modern languages (elective), elocution, and an industrial.

*Spring Term.*—English grammar, algebra, U. S. history, elementary chemistry, botany, agriculture, free-hand drawing, modern languages (elective), elocution, and an industrial.

### SECOND YEAR.

*Fall Term.*—Rhetoric, logic, agriculture, geology, physics, botany, geometry, modern languages (elective), book-keeping, physiology, free-hand and mechanical drawing, and an industrial.

*Winter Term.*—Rhetoric, logic, agriculture, physics, physiology, horticulture, geometry, modern languages (elective), free-hand and mechanical drawing, book-keeping, and an industrial.

*Spring Term.*—Rhetoric, logic, agriculture, physics, horticulture, entomology, trigonometry, modern languages (elective), free-hand and mechanical drawing, book-keeping, physiology, and an industrial.

### THIRD YEAR.

*Fall Term.*—Political economy, stock breeding and dairy farming, geology, laboratory work, entomology and bee culture, surveying, language (elective), free-hand and mechanical drawing, farming book-keeping, farming and commercial law, and an industrial.

*Winter Term.*—Political economy, stock breeding, dairy farming, geology and laboratory work, entomology, orchards and gardens,



leveling and draining, languages (elective), free-hand and mechanical drawing, farming book-keeping, farming and commercial law, and an industrial.

*Spring Term.*—Political economy, experiments, zoology, veterinary, metals and laboratory work, forestry and bee culture, road engineering, modern languages (elective), free-hand and mechanical drawing, farming book-keeping, farming and commercial law, and an industrial.

#### POST GRADUATE YEAR.

*Fall Term.*—Constitutional law and literature, farm implements, harvesting, geology, organic chemistry and analysis, economic value of forest and timber, microscopic botany, mechanics or astronomy, language (elective), physiology, sanitation.

*Winter Term.*—Constitutional law, literature, agriculture, geology, chemistry, botany, civil or mechanical engineering, astronomy, modern languages (elective), physiology, sanitation.

*Spring Term.*—Constitutional law, agriculture, geology, chemistry, landscape gardening and floriculture, mechanical or civil engineering, modern languages (elective), physiology, sanitation.

#### EXPENSES.

Tuition is \$5 per term, or \$15 per session for each student.

Students holding State appointments have free tuition.

Board and lodging may be had in town at reasonable rates.

All male students will be required to wear uniforms, which can be procured at Corvallis at a cost not exceeding \$15.

#### EXPERIMENTAL STATION.

The work of the station will be a prominent feature of the institution. Bulletins will be issued in the near future, giving such information as may be thought of interest and importance to the public, and copies will be forwarded to every patron of the college.

#### REMARKS ON THE CURRICULUM.

It will be found upon examination that the following subjects in the curriculum are not provided for in the faculty. These subjects had to be distributed among the several members of the faculty, namely, geology, mineralogy, entomology, astronomy, meteorology, veterinary, landscape gardening and horticulture. The principle

of distribution was the analogy between the assigned subject and the chair to which it was assigned; a better principle would be the tastes of the several teachers. It was expected that the chair of household science would be filled before the end of the term now closing, but the appointment has not been made, and this failure has created a hiatus which the faculty cannot bridge over.

None of the subjects named above have received any attention during the present term, nor can they receive any, with present arrangements, during the coming term. The reason is, that each teacher seems to be fully occupied with the duties proper to his own chair, and also because the students have been too much pressed with other studies to be able to do more. This leads me to remark that, in the judgment of the faculty, the curriculum is too extensive for the time allotted; that the course prescribed for three years is enough for four, at least, and they offer a scheme of instruction covering four years, which I herewith transmit most respectfully, and submit for the consideration of the board of regents. Two departures from the prescribed syllabus have seemed to me imperative. These consist in the organization of an algebra class in the preparatory department, and in the omission of elementary chemistry from the first year's college course. This change has not been made without hesitation. To speak of the latter change, the omission of elementary chemistry, it was necessary to omit something from the first year's course, or else institute alternate lessons, and this would have engendered either superficial work just where thorough work was most needful, or else establish very limited courses for the first year's studies. I foresee similar trouble in relation to other parts of the course.

It is, perhaps, expedient for me to call the attention of the board strongly to several difficulties in adopting any curriculum for an agricultural college. I shall not enter into detail. The first difficulty arises out of the *extent* of the course. If on the one hand the curriculum be less extensive than that of an ordinary college there is a loss of dignity and respectability, and with it a loss of the best young men and women, precisely those most needful for the present and future prosperity of the college. If on the other hand the course be equally extensive with that of an ordinary college, it is claimed that students are rather trained away from the farm than to it; but in either case the cause of agricultural education suffers. The second difficulty springs out of the relation between pure and technical studies; the technical depend on the pure for significance, and therefore come logically after the pure in order of time; hence,

if the technical come too early in the course they cannot be understood; if too late they are never reached by the majority of the students. For instance, the subject of soils and fertilizers belongs in the course after the study of chemistry, and should chemistry fall on the second year, the consideration of soils and fertilizers would fall on the third year; but comparatively few students reach the third year. The third difficulty arises out of the want of a rigorous definition of studies; it is required, for example, that algebra, chemistry, constitutional law, etc., be taught, but the extent to which they shall be taught is left to the teacher's discretion, and here there is ground for friction. It might appear an easy matter to settle such questions, but it is not so by any means.

### NEEDS.

1. Farm and equipments.
2. Mechanical building and equipment, the building to include armory and offices and headquarters for the military department, \$10,000.
3. Boarding hall for students, \$5,000.
4. Library, \$700.
5. Institute work, \$300.
6. For the several departments, \$1,000.

### SUGGESTIONS.

1. The board of regents should establish some degrees for graduation.
2. One of our most pressing wants is our need of an entomologist; a man to teach zoology, entomology and kindred subjects would be a great blessing to the institution and to the State, and such a man is indispensable to the station.
3. Household economy and sanitation are subjects of prime importance to the welfare of the family, and through the family, of the community, and this department should be filled as soon as convenient.
4. I should be glad to have authority to organize classes intermediate between those of the preparatory department and those of the first year's college course. This authority is not to be used without a necessity.
5. In the absence of other regulations for the government of the

students I ask for permission to enforce rigidly the following regulations, viz :

Every student who enters this school is received as a gentleman or lady; i. e., he is expected to speak the truth, be honest, be obedient to all rules expressed or implied, to be polite and respectful in his bearing toward fellow students and the faculty, and to visitors and employes, to be prompt, diligent, and attentive in his work, and whenever the college life of any student does not answer to these conditions, or to this character, he shall be sent to his parents or guardian.

## STUDENTS.

### THIRD YEAR.

| Names of Pupils.     | Residence.  |         |                |
|----------------------|-------------|---------|----------------|
|                      | Town.       | County. | State or Terr. |
| 1. J. G. Buchanan    | Corvallis   | Benton  | Oregon.        |
| 2. R. G. Buchanan    | Corvallis   | Benton  | Oregon.        |
| 3. H. L. Arnold      | Corvallis   | Benton  | Oregon.        |
| 4. J. C. Applewhite  | Corvallis   | Benton  | Oregon.        |
| 5. Jesse Wilkins     | Corvallis   | Benton  | Oregon.        |
| 6. A. S. Additon     | Corvallis   | Benton  | Oregon.        |
| 7. Thomas A. Jones   | Corvallis   | Benton  | Oregon.        |
| 8. C. C. Wilson      | Corvallis   | Benton  | Oregon.        |
| 9. Clarence Avery    | Corvallis   | Benton  | Oregon.        |
| 10. Clara V. Fisher  | Corvallis   | Benton  | Oregon.        |
| 11. Clara G. Irvine  | Corvallis   | Benton  | Oregon.        |
| 12. Bertna Davis     | Corvallis   | Benton  | Oregon.        |
| 13. Mollie M. Fisher | Corvallis   | Benton  | Oregon.        |
| 14. Emma Weber       | Corvallis   | Benton  | Oregon.        |
| 15. Emma Kittredge   | Monroe      | Benton  | Oregon.        |
| 16. John D. Denman   | Corvallis   | Benton  | Oregon.        |
| 17. Barney S. Martin | Brownsville | Linn    | Oregon.        |

### SECOND YEAR.

|                         |           |        |         |
|-------------------------|-----------|--------|---------|
| 1. L. A. Helm           | Corvallis | Benton | Oregon. |
| 2. Eddy Stock           | Corvallis | Benton | Oregon. |
| 3. John Fulton          | Corvallis | Benton | Oregon. |
| 4. J. H. Starr          | Corvallis | Benton | Oregon. |
| 5. W. D. Risley         | Albany    | Benton | Oregon. |
| 6. T. J. Risley         | Albany    | Benton | Oregon. |
| 7. Boyd W. Hamilton     | Oakville  | Linn   | Oregon. |
| 8. U. S. Loughary       | Monmouth  | Polk   | Oregon. |
| 9. Chester Avery        | Corvallis | Benton | Oregon. |
| 10. C. O. Wells         | Corvallis | Benton | Oregon. |
| 11. O. V. Waggoner      | Corvallis | Benton | Oregon. |
| 12. Ida May Ray         | Corvallis | Benton | Oregon. |
| 13. Hattie Friendly     | Corvallis | Benton | Oregon. |
| 14. May Warren          | Corvallis | Benton | Oregon. |
| 15. Ethel Lewis         | Corvallis | Benton | Oregon. |
| 16. Jessie V. Waggoner  | Corvallis | Benton | Oregon. |
| 17. Lena Mackey         | Corvallis | Benton | Oregon. |
| 18. Anna Allen          | Corvallis | Benton | Oregon. |
| 19. Ida Right           | Corvallis | Benton | Oregon. |
| 20. Ida May Locke       | Corvallis | Benton | Oregon. |
| 21. Annette H. Thompson | Corvallis | Benton | Oregon. |

## ONE YEAR.

| Names of Pupils.      | Residence.    |         |               |
|-----------------------|---------------|---------|---------------|
|                       | Town.         | County. | State or Ter. |
| 1. Charles L. Johnson | Corvallis     | Benton  | Oregon.       |
| 2. William R. Hull    | Corvallis     | Benton  | Oregon.       |
| 3. Joseph Alexander   | Corvallis     | Benton  | Oregon.       |
| 4. Percival Nash      | Corvallis     | Benton  | Oregon.       |
| 5. Geo. L. Paul       | Corvallis     | Benton  | Oregon.       |
| 6. Frank Hilly        | Corvallis     | Benton  | Oregon.       |
| 7. Harry H. Samuels   | Corvallis     | Benton  | Oregon.       |
| 8. Caleb A. Davis     | Corvallis     | Benton  | Oregon.       |
| 9. D. H. Woodward     | Corvallis     | Benton  | Oregon.       |
| 10. Ora D. Davidson   | Buena Vista   | Polk    | Oregon.       |
| 11. Milton M. Wilkins | Corvallis     | Benton  | Oregon.       |
| 12. Seth Hurlburt     | Corvallis     | Benton  | Oregon.       |
| 13. Arthur Spaulding  | Buena Vista   | Polk    | Oregon.       |
| 14. Chester Mason     | Corvallis     | Benton  | Oregon.       |
| 15. C. Henderson      | Dufur         | Wasco   | Oregon.       |
| 16. Clara Duncan      | Summit        | Benton  | Oregon.       |
| 17. Sarah Harris      | Corvallis     | Benton  | Oregon.       |
| 18. Minnie Waggoner   | Corvallis     | Benton  | Oregon.       |
| 19. Net ie Ground     | Wells Station | Benton  | Oregon.       |
| 20. Helen Holgate     | Corvallis     | Benton  | Oregon.       |
| 21. Grace G. Jenks    | Corvallis     | Benton  | Oregon.       |
| 22. Ann Lewis         | Corvallis     | Benton  | Oregon.       |
| 23. Rose Horton       | Corvallis     | Benton  | Oregon.       |
| 24. Fanny Hurlburt    | Corvallis     | Benton  | Oregon.       |

## PREPARATORY DEPARTMENT.

|                            |                |           |              |
|----------------------------|----------------|-----------|--------------|
| 1. John A. Fisher          | Corvallis      | Benton    | Oregon       |
| 2. Geo. Weber              | Corvallis      | Benton    | Oregon       |
| 3. Lucius O. Hull          | Corvallis      | Benton    | Oregon       |
| 4. Chesley P. Clark        | Corvallis      | Benton    | Oregon       |
| 5. Milton A. Wyatt         | Corvallis      | Benton    | Oregon       |
| 6. Marion Needham          | Corvallis      | Benton    | Oregon       |
| 7. Clarence Henkle         | Tangent        | Linn      | Oregon       |
| 8. Rowland K. Chambers     | Corvallis      | Benton    | Oregon       |
| 9. Frank Mitchell          | Corvallis      | Benton    | Oregon       |
| 10. Grant Williamson       | Bonanza        | Klamath   | Oregon       |
| 11. Scott Gharrett         | Albany         | Benton    | Oregon       |
| 12. C. M. Miller           | Missoula       | Missoula  | Montana Ter. |
| 13. Frank Rowland          | Gervais        | Marion    | Oregon       |
| 14. Charles O. Rice        | Corvallis      | Benton    | Oregon       |
| 15. Richard W. Scott       | Crawfordsville | Linn      | Oregon       |
| 16. Henry Buckhouse        | Milwaukee      | Clackamas | Oregon       |
| 17. Addie May Bristow      | Missoula       | Missoula  | Montana Ter. |
| 18. Nellie Hogue           | Corvallis      | Benton    | Oregon       |
| 19. Ollie Irene Thompson   | Corvallis      | Benton    | Oregon       |
| 20. Georgia Milner         | Corvallis      | Benton    | Oregon       |
| 21. Ina Rice               | Crawfordsville | Linn      | Oregon       |
| 22. Ann Martyn             | Corvallis      | Benton    | Oregon       |
| 23. Bertha C. Spangler     | Corvallis      | Benton    | Oregon       |
| 24. Nellie Davidson        | Buena Vista    | Polk      | Oregon       |
| 25. James William Spangler | Corvallis      | Benton    | Oregon       |
| 26. Elmer H. Smith         | Corvallis      | Benton    | Oregon       |
| 27. Althea A. Leach        | Lexington      | Morrow    | Oregon       |
| 28. Paul Henderson         | Dufur          | Wasco     | Oregon       |
| 29. C. C. Wilson           | Wells Station  | Benton    | Oregon       |

# TABLE OF CLASS-ROOM WORK.

FIRST TERM—SESSION 1888-89.

|                          | No. of Students<br>in Class.        | Time Taught<br>Each Week.   | Class.  | Subject.  | Subjects from Curriculum Omitted or Post-<br>poned, on Account of Students Being Over-<br>crowded With Work. |
|--------------------------|-------------------------------------|---|---|---|--|
| Professor Arnold-----    | 26<br>16<br>13                      | 10 hours-----<br>4 hours-----<br>5 hours-----   | Second year---<br>Third year---<br>Third year---  | Rhetoric and Logic-----<br>Constitutional Law-----<br>Political Economy-----                                      | First year, none.<br>Second year, none.<br>Third year, none.   |
| Total-----               | 45                                  | 19 hours-----   |   |   |  |
| Professor Grimm-----     | 8                                   | 3 hours-----  | Third year---   | Agriculture-----  | First year, none.<br>Second year, Tillage and Drainage.<br>Third year, none.                                 |
| Professor Letcher-----   | 25<br>13<br>16<br>60                | 10 hours-----<br>5 hours-----<br>5 hours-----<br>2½ hours-----  | First year---<br>Second year---<br>Third year---<br>All-----  | Algebra-----<br>Geometry-----<br>Mechanics and Surveying-----<br>Drill and Tactics-----                           | First year, none.<br>Second year, Meteorology.<br>Third year, none.  |
| Total-----               | 114                                 | 22½ hours-----  |   |   |  |
| Professor Berchtold----- | 25<br>17<br>10<br>4<br>3<br>3<br>50 | 5 hours-----<br>2½ hours-----<br>2½ hours-----<br>2½ hours-----<br>2½ hours-----<br>2½ hours-----<br>2 hours----- | First year---<br>First year---<br>First year---<br>Second year---<br>Second year---<br>Second year---<br>All----- | English Grammar-----<br>German-----<br>Latin-----<br>German-----<br>Latin-----<br>French-----<br>Vocal music----- | First year, History.<br>Second year, none.<br>Third year, none.  |
| Total-----               | 112                                 | 19½ hours-----  |   |   |  |

# TABLE OF CLASS-ROOM WORK.—CONTINUED.

FIRST TERM—SESSION 1888-89.

|                   | No. of Students<br>in Class. | Time Taught<br>Each Week. | Class.         | Subject.  | Subjects from Curriculum Omitted or Post-<br>poned on Account of Students Being Over-<br>crowded With Work. |
|-------------------|------------------------------|---------------------------|----------------|---|---|
| Professor Hull    | 25                           | 5 hours                   | First year     | Physiology, Reading and<br>F. H. Drawing                                    | First year, Geography.  |
|                   | 16                           | 5 hours                   | Second year    | Physiology, Elocution and<br>F. H. Drawing                                  | Second year, Mechanical Drawing.  |
|                   | 16                           | 5 hours                   | Third year     | Physiology, Elocution and<br>F. H. Drawing                                  | Third year, Farming and Commercial Law.   |
| Total             | 57                           | 15 hours                  |                |   |   |
| Professor Lake    | 16                           | 3 hours                   | Third year     | Horticulture  | First year, Botany.   |
|                   | 7                            | 5 hours                   | Prep. dep't    | Arithmetic  | Second year, Farm Plants.   |
|                   | 8                            | 5 hours                   | Second year    | Botany  | Third year, none.   |
| Total             | 31                           | 13 hours                  |                |   |   |
| Professor Irish   | 9                            | 4 hours                   | Second year    | Chemistry   | First year, Elementary Chemistry.   |
|                   | 12                           | 3 hours                   | 2d and 3d year | Physics   | Second year, Geology and Mineralogy.  |
| Total             | 21                           | 7 hours                   |                |   | Third year, Geology and Laboratory Work.  |
| Professor Bristow | 29                           | 25 hours                  | Prep. dep't    | Geography<br>Arithmetic<br>English Grammar<br>Reading<br>Elementary Algebra | First year, none.<br>Second year, Commercial Book-keeping.<br>Third year, Farm Book-keeping.                |

## THE INSTITUTE WORK.

It is proposed to make this a popular feature of the college work. For this reason it is planned to hold four institutes—one at each of the following places: Corvallis, Salem, Roseburg and Hillsboro. The one at Corvallis was held on November 15 and 16. The subjects presented were as follows: "Ensilage," Wallis Nash; "Dairy Interests," Thos. Paulsen; "County Fairs," Geo. Armstrong; "Native Grasses," M. Wilkins; "Drainage," Edgar Grimm. There were several other subjects on the programme, but as the persons having them were absent, the consideration of them was left for some future time. The attendance at this first institute was very small. In large part this was due to a failure of the committee to thoroughly advertise. There were, however, enough present to make lively discussions on several of the topics presented. The next one, to be held at Salem, will, it is confidently expected, have a much larger attendance, as it has been well advertised and as several of the prominent men of that section will address the meetings. The manner of getting up the institute is very simple. The only problem of any consequence that confronts us is money for printing, stationery and traveling expenses. We write, or better, visit some leading men at the place of holding the institute, get their help about place of meeting, speakers, etc., and then work out a programme with the material, filling in vacant places, etc., with members of the faculty of the college. In the future we expect this institute work to be largely carried on by the farmers themselves. We also expect the institute to be a medium for the interchange of ideas and information between the farmers and their college. In the East as many as an hundred institutes are held in a season in one State, and those with less than half the natural advantages of our own State. A few hundred dollars spent in such work would be of inestimable value to the farmers.

## INSTRUCTION IN AGRICULTURE.

AGRICULTURAL COLLEGE, }  
CORVALLIS, Dec. 19, 1888. }

*President B. L. Arnold:*

I have had the third year students in agriculture this term for one hour each day. Whole number in class, seven.

E. GRIMM.



## REPORT OF P. H. IRISH.

Professor of chemistry and physics, for fall term, 1888, O. A. C.:

*Chemistry*.—Number of students, 9. Number of hours in class per week, at first five, later three. Total number of recitations, fifty-four. Total number of absences, eighteen. Average per cent. of absences, 3.7.

*Physic*.—Number of students, twelve. Number of hours in class per week, at first five, later two. Total number of recitations, forty-six. Total number of absences, thirty-two. Average per cent. of absences, 5.8.

## THE HORTICULTURAL DEPARTMENT.

AGRICULTURAL COLLEGE, }  
CORVALLIS, OREGON, December 18, 1888. }

*Mr. President:*

The work in the horticultural department for this term has been very crude. To begin, I was not here to attend to such work until the close of the third week, and when I did arrive it was very difficult to start, as a new programme had to be made, and that, along with the delay and confusion consequent on changing in mid-term, brought me to nearly the close of the fourth week before work began. I then commenced to lecture on horticulture before the third-year students—a class of sixteen; ten gentlemen, six ladies. After giving such lectures for about two and one-half weeks, it was found necessary to again change the programme, this time to lessen the work of the third-year students, who were carrying six and seven recitations each day. Professor Grimm and myself agreed to alternate our work. At the time of this change I introduced for a text-book “Quinn’s Money in the Garden.” From that time the students have recited to me every alternate day on an assigned lesson in the above text-book. They have passed over the subject matter and have done fairly well considering the former preparation for such work and the *very* limited means for illustration at our disposal. The second-year students began the study of systematic botany about the same time that the others began work. In a few days we found it impracticable to continue this work on account of lack of material for work and the general unfitness of the students to handle systematic botany, some of them having never taken elementary botany. The class was turned over to Prof.

Berchtold, who gave them language every day instead of alternate days. About the middle of the term I took charge of an arithmetic class from Prof. Bristow's department.

The work on the grounds, in connection with station work, has taken most of my time. In the planning and execution of such work it is necessary to be on the "scene of action" almost constantly. This has been impossible in the past from the arrangement of class work. In the future it is hoped that we may avoid any clashing in this direction and thus avoid much confusion.

The second-year male students were required to work on the lawns and garden one hour each day. We would like to make this work solely educational, but at present it is impracticable. Our boys fell into line and did as good work out-doors as in the classroom.

Respectfully submitted,  
E. B. LAKE.

### THE PREPARATORY DEPARTMENT.

AGRICULTURAL COLLEGE, }  
CORVALLIS, OREGON, December 21, 1888. }

*Mr. President:*

Twenty male and nine female students have been enrolled in the preparatory department of the State agricultural college during the first term of the session of 1888-9. These were organized into six classes for daily recitations, as follows:

*Geography.*—This class includes nine male and seven female pupils. They draw maps and recite, principally, by the topic method.

*Arithmetic.*—There were seven young men presented themselves for admission to the department who did not possess the requisite qualifications to enter my percentage class. I brought the matter before the faculty, and it was thought best not to send any away for the first year, at least. These persons were therefore formed into a more elementary class, and Prof. Lake kindly consented to hear them recite. The regular class, known as the "percentage class," includes twenty-two pupils, thirteen male and nine female.

*Grammar.*—This class is composed of seventeen males and seven females.

*Reading.*—The entire department has had daily exercises in reading, spelling, analysis of words, punctuation and kindred subjects.

*Algebra.*—At the suggestion and request of the president, I organized a class of twenty in elementary algebra. They are doing good work.

The work of the department has been quite satisfactory, indeed, and I am pleased to say that a general determination is manifested to put forth still greater efforts for the coming terms.

*Needs.*—It will be impossible for me to do the work assigned me in college course without some more assistance in this department.

Most respectfully submitted,

W. W. BRISTOW,  
Principal Preparatory Department.

## MATHEMATICS AND ENGINEERING.

AGRICULTURAL COLLEGE,  
CORVALLIS, OREGON, Dec. 21, 1888. }

*Professor B. L. Arnold:*

I herewith submit my report of the mathematical and engineering department for the first term of session, 1888-89. The senior or third-year class (16 members) have recited the third hour of each day—surveying on Tuesdays and Thursdays, mechanics on Wednesdays, Fridays and Mondays—and have completed 141 pages of Carhart's Surveying and 103 pages of Woods' Mechanics.

Recognizing the classes need of field work in surveying, and they being able to meet me at no other time, I have each Saturday morning from 9 to 12 o'clock met and instructed such students as desired this practice. The fact that one-half of the class have never attended this necessary branch of instruction in surveying demonstrates conclusively the necessity of making their attendance thereat obligatory instead of optional, as at present, and I should be pleased to have the regents' attention called to this matter.

The intermediate or second-year class (13 members) have recited the first hour of each day on geometry and have completed 210 pages of Wentworth's Plane and Solid Geometry.

The freshman or first-year class (25 members) have, for the purpose of better instruction, been divided into two sections, which recite the fifth and sixth hours of each day and have completed 150 pages of Wentworth's Algebra.

It gives me pleasure to call attention to the zeal and interest shown by the students in their mathematics and the satisfactory progress they

have made. The engineering department has been supplied with a compass, plane table, level, rods, chain, tapes, etc., but still needs a light mountain transit with solar attachment, which will cost about \$300.

Very respectfully yours,

JOHN D. LETCHER,  
Professor Mathematics and Engineering.

### THE MILITARY DEPARTMENT.

AGRICULTURAL COLLEGE,  
CORVALLIS, OREGON, Dec. 21, 1888. }

*Professor B. L. Arnold:*

I herewith submit my report of the military department for the first term of the session 1888-89: All the male students, about sixty in number, have been drilled one-half hour each day and have completed squad drill and are now being drilled in "the school of the company." On account of having no guns we have been compelled to omit all instruction and practice in the manual of arms.

As all the students were raw recruits I have had to exercise a great deal of care and patience with them and to consume much more time than would ordinarily be required. In instructing and drilling the senior class before placing them in charge of the other students, I am, however, glad to notice the progress made and the improvement in their carriage and bearing.

This department should be furnished at the earliest practical moment with 150 cadet rifles, 45 calibre, and the necessary side-arms, consisting of swords, bayonets, belts, cartridge boxes, etc., etc., and a room in the college building should be fitted up as an armory. A plot of ground of sufficient size should be leveled and drained for a parade ground.

Very respectfully yours,

JOHN D. LETCHER,  
Professor in Charge of Military Department.

### MILITARY, ENGINEERING AND MATHEMATICS.

AGRICULTURAL COLLEGE,  
CORVALLIS, December 14, 1888. }

*President Arnold:*

First term, session 1888-89. Senior class, 16 members, recites one hour every day. Second-year class, 13 members, recites one

hour every day. First-year, first and second sections, 25 members, recites one hour every day. Male students, about 60, drill one-half hour every day. Total time engaged in recitations, four and one-half hours every day. The time employed in surveying on Saturdays has averaged *about one-half hour per school day for the entire term.*

JOHN D. LETCHER,

Prof. Mathematics and Engineering, and Prof. in Charge Military Department.

### REPORT OF W. N. HULL.

FALL TERM, 1888.

AGRICULTURAL COLLEGE,  
CORVALLIS, December 19, 1888. }

#### *Hon. Board of Regents:*

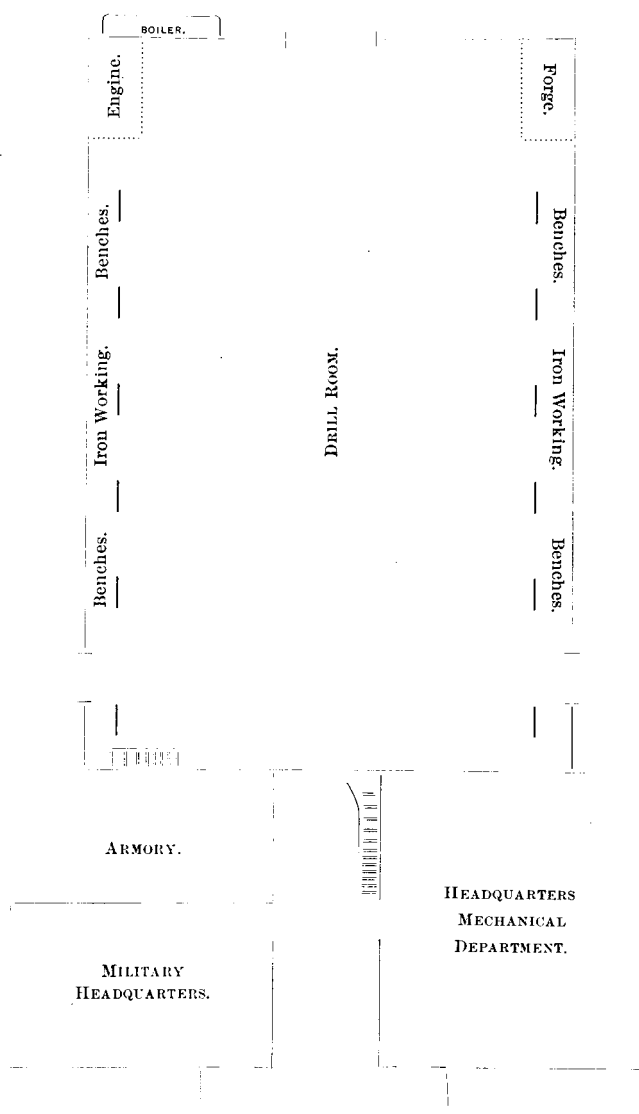
First Year. Physiology, two lessons per week; free-hand drawing, two lessons per week; reading, one lesson per week. Second year, physiology, two lessons one week, three the next week; free-hand drawing, two lessons one week, three the next week; elocution, two lessons one week, three the next week. Third year. Physiology, one lecture weekly; drawing, two lessons per week; elocution, two lessons per week; several lessons in short-hand writing.

I desire for my department one skeleton, \$50; two Yaggy's anatomical charts.

Respectfully,

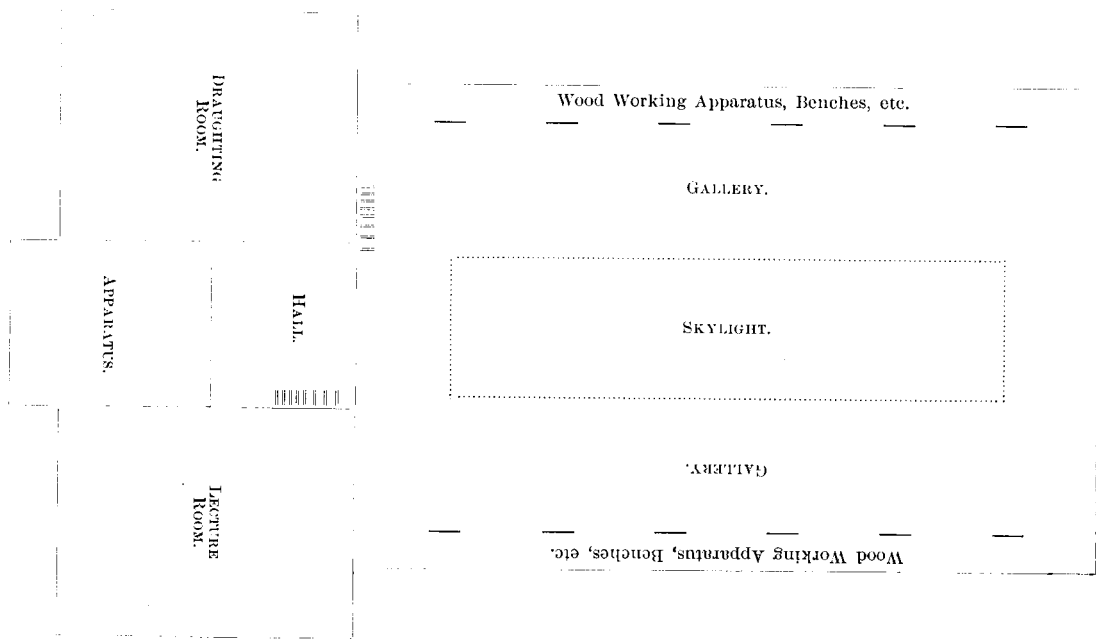
W. N. HULL.

**A ROUGH PLAN OF MECHANICAL BUILDING, ARMORY, DRILL HALL  
AND OFFICES COMBINED.**



**GROUND PLAN.**

Cost of Building and Apparatus, about \$8,000.  
Size Main building, 30x60 feet; Drill Room, 48x72 feet.



Wood Working Apparatus, Benches, etc.

GALLERY.

SKYLIGHT.

GALLERY.

Wood Working Apparatus, Benches, etc.

HALL.

DRAWING  
ROOM.

APPARATUS.

LECTURE  
ROOM.

