

C. 13      *Sept 1908*

THIRD BIENNIAL REPORT  
OF THE  
BOARD OF TRUSTEES  
OF THE  
CALIFORNIA POLYTECHNIC SCHOOL

COMPRISING THE

Reports of the Director and Secretary of the Board

1906 - 1908

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SAN LUIS OBISPO, CALIFORNIA

NOVEMBER, 1908

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SACRAMENTO:

W. W. SHANNON, : : : : : SUPERINTENDENT STATE PRINTING.

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## LETTER OF TRANSMITTAL.

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December 3, 1908.

*To His Excellency, JAMES N. GILLETT, Governor, Sacramento, Cal.*

DEAR SIR: I beg to hand you herewith the report of Leroy B. Smith, Director of the California Polytechnic School, which is submitted as the third biennial report of the Board of Trustees of that school.

The Director has treated of the work and policies so thoroughly and satisfactorily to the Board of Trustees that the Board is pleased to transmit his report as its own.

There also accompanies this the report of the Secretary of this Board, showing the principal actions in appointments and permanent improvements, and a statement of receipts and disbursements.

By order of the Board of Trustees.

R. M. SHACKELFORD,  
President.

## REPORT OF THE DIRECTOR.

*To the Board of Trustees.*

GENTLEMEN: This is the third biennial report of the Director of California Polytechnic School, and the first which it has been my privilege to submit. The report covers the period from July 1, 1906, to June 30, 1908, the fourth and fifth years in which instruction has been given by the institution. There is also included a classification of students registering for the scholastic year 1908-09. The last biennial period includes but six months of service by the present Director, who began his duties January 1, 1908, upon the resignation of Dr. Leroy Anderson, who left the institution to become professor of Agricultural Practice and director of Farm Schools at the University of California. In taking up the administrative duties of the school, I wish to acknowledge appreciation of well-laid plans for its growth, and of the solid foundation and thorough organization established by Dr. Anderson in his five years of effective service for the institution.

### FACULTY.

The following is a record of the resignations and appointments of the last biennial period:

Mr. Sydney S. Twombly, B.S., D.V.S., instructor in Agricultural Chemistry and Veterinary Science, resigned June 1, 1907, the resignation taking effect June 30, 1907.

Mr. Frank E. Edwards, M.S., vice Sydney S. Twombly, appointed June 1, 1907, service to begin July 1, 1907. Mr. Edwards was graduated from the Oregon Agricultural College in 1895, and the following year was a graduate student in chemistry. He later served two years as assistant instructor in chemistry. One year was spent as a graduate student in agricultural chemistry at the University of California. In 1898-99 he served in the Second Oregon Infantry in the Philippines, and was for about five years altogether commandant of cadets at the Oregon Agricultural College.

Mr. James Edwyn Roadhouse, B.S., instructor in Plant Industry and Irrigation, resigned June 1, 1907, the resignation taking effect June 30, 1907. In the sudden death of Mr. Roadhouse, which occurred in November, 1907, the cause of agricultural education on the Pacific coast lost one of its most able exponents.

1908-9 (to November 1, 1908).

	1st Year.	2d Year.	3d Year.	Special.
Agriculture .....	8	9	12	2
Mechanics .....	32	19	16	..
Household Arts .....	14	8	12	1
	—	—	—	—
	54	36	40	3

The counties from which students register are widely scattered:

Counties.	1906-7.	1907-8.	1908-9.
Alameda .....	1	..	..
Amador .....	1	1	..
Butte .....	..	..	2
Colusa .....	2	2	1
El Dorado .....	1	..	..
Fresno .....	1	3	4
Humboldt .....	..	..	1
Inyo .....	..	..	1
Kern .....	4	2	1
Los Angeles .....	6	17	12
Mendocino .....	1	..	..
Merced .....	2	2	6
Monterey .....	3	6	7
Orange .....	2	4	3
Riverside .....	2	..	4
Sacramento .....	3	5	6
San Benito .....	..	2	2
San Bernardino .....	..	..	1
San Diego .....	3	4	6
San Francisco .....	1	..	..
San Joaquin .....	..	..	2
San Luis Obispo .....	64	53	48
Santa Barbara .....	13	10	9
Santa Clara .....	1	6	..
Santa Cruz .....	2	5	5
Solano .....	1	1	..
Sonoma .....	..	..	1
Stanislaus .....	2	..	..
Trinity .....	..	2	..
Tulare .....	4	4	4
Ventura .....	3	5	3
Colorado .....	..	1	1
Idaho .....	..	..	1
Minnesota .....	1	1	..
South Dakota .....	..	..	1
India .....	..	3	..
Japan .....	2	2	1
Totals .....	126	141	*133

## GRADUATION.

Three classes have now been graduated from the institution, diplomas having been awarded as follows:

	Agriculture.	Mechanics.	Household Arts.	Total.
June, 1906 .....	2	2	4	8
June, 1907 .....	5	4	7	16
June, 1908 .....	8	4	4	16
Prospective graduates in June, 1909	10	14	10	34

\* To November 1, 1908.

An enthusiastic alumni association was organized soon after the first commencement, and the loyalty to the institution of this body of forty young men and women has been most gratifying to trustees, faculty, and friends of the school. Of the forty graduates, eight are now continuing their study in other institutions, while several others definitely plan to continue their study in the near future. Of the young women graduates who are now serving as homekeepers, it can be said that their training in domestic science and domestic art is proving most helpful in the practical duties of the home. Graduates in Agriculture are serving successfully in various capacities—one as manager of a fruit farm, one as manager of a ranch, another as instructor in horticulture in a State school of industry, others in the sugar beet industry, and still others as dairymen and creamery operators. These men believe with the faculty of the school that a young man of to-day makes no mistake in entering upon scientific agriculture. Graduates in Mechanics are creditably filling positions in various mechanical and electrical lines, a few already occupying places of considerable responsibility at substantial salaries.

#### AIM OF THE COURSES OF STUDY.

The aim of the courses of study is to give boys and girls a training in the arts and sciences which deal with the life of the home, particularly the rural home with its farm and farm animals, the orchard, and the shop. Emphasis is laid upon work and service as well as upon scholarship. The courses of study do not lead toward the professions, neither do they yet meet in full the entrance requirements of the universities. The school is, in fact, designed first for the boy and the girl who are not preparing for collegiate work, but who do desire instruction in the essential high school subjects and training in the arts of the home. The truth is, however, that our students during the courses of study in the school are gaining their inspiration for a college course, and they leave the institution to go on with advanced work. Once having made the decision, the road to completion of the college entrance requirements in any standard high school is not long. We have but few years of observation and experience to guide, but indications to-day are that the percentage of Polytechnic School students who will ultimately go on to collegiate work will be nearly as large as that of the average high school whose courses from the beginning are designed to meet university entrance requirements. If the institution can instill the inspiration for higher things, its service to the State is largely accomplished.

#### THREE LINES OF INSTRUCTION.

Attention continues to be devoted to three main lines of instruction, namely, Agriculture, Mechanics, and Household Arts. The courses of

study outlined in this section of the report were given in 1907-1908, and are the result of experience gained in the first four years of the life of the school.

### COURSES OF STUDY.

#### AGRICULTURE.

	<i>First Year.</i>	<i>*PERIODS PER WEEK.</i>		
		<i>1st Term.</i>	<i>2d Term.</i>	<i>3d Term.</i>
English . . . . .		5	5	5
Algebra . . . . .		5	5	5
Botany and Plant Propagation . . . . .		8	8	8
Soils and Fertilizers . . . . .		5	5	5
Poultry . . . . .		..	3	3
Freehand Drawing and Farm Buildings . . . . .		5	4	4
Carpentry and Forging . . . . .		8	8	8
		—	—	—
		36	38	38
<i>Second Year.</i>				
English . . . . .		5	5	5
Mathematics II . . . . .		5	5	5
Chemistry . . . . .		8	8	8
Horticulture . . . . .		..	11	7
Dairying . . . . .		..	7	6
Animal Husbandry . . . . .		11	..	4
Drawing . . . . .		7	..	..
		—	—	—
		36	36	35
<i>Third Year.</i>				
History and Civics . . . . .		5	5	5
Mathematics III . . . . .		5	5	5
Agricultural Chemistry . . . . .		5	5	5
Surveying and Irrigation . . . . .		4	4	4
Animal Physiology . . . . .		3	3	3
Animal Husbandry . . . . .		3	3	3
Physics . . . . .		7	7	7
		—	—	—
		32	32	32

#### MECHANICS.

	<i>First Year.</i>	<i>*PERIODS PER WEEK.</i>		
		<i>1st Term.</i>	<i>2d Term.</i>	<i>3d Term.</i>
English . . . . .		5	5	5
Forge Work . . . . .		4	4	4
Algebra . . . . .		5	5	5
Freehand Drawing . . . . .		5	5	5
Mechanical Drawing . . . . .		8	6	6
Carpentry . . . . .		12	12	12
		—	—	—
		39	37	37

\*Each school day is divided into eight 45-minute periods.

	<i>Second Year.</i>	<i>*PERIODS PER WEEK.</i>		
		1st Term.	2d Term.	3d Term.
Mathematics II . . . . .		5	5	5
English . . . . .		5	5	5
Elementary Physics and Electricity . . . . .		6	6	6
Mechanical Drawing . . . . .		4	4	4
Chemistry . . . . .		8	8	8
Machine Work . . . . .		4	8	8
Forge Work . . . . .		4	..	..
		—	—	—
		36	36	36

*Third Year.*

History and Civics . . . . .		5	5	5
Mathematics III . . . . .		5	5	5
Machine Work . . . . .		8	8	8
Surveying . . . . .		4	4	4
Physics . . . . .		6	6	6
Steam and Electrical Machinery . . . . .		7	7	7
		—	—	—
		35	35	35

## HOUSEHOLD ARTS.

*First Year.*

Algebra . . . . .		5	5	5
English . . . . .		5	5	5
Elementary Chemistry . . . . .		5	5	..
Physiology . . . . .		..	..	5
Sewing . . . . .		11	11	11
Freehand Drawing . . . . .		5	5	5
Sloyd . . . . .		4	4	4
		—	—	—
		35	35	35

*Second Year.*

English . . . . .		5	5	5
Dairying . . . . .		5	5	..
Gardening . . . . .		..	..	4
Domestic Science I . . . . .		3	3	3
Cooking Laboratory . . . . .		8	8	8
Mathematics . . . . .		5	5	5
Chemistry . . . . .		8	8	8
		—	—	—
		34	34	33

*Third Year.*

History . . . . .		5	5	5
Botany . . . . .		6	6	6
Domestic Science II . . . . .		3	3	3
Cooking Laboratory . . . . .		8	8	8
Sloyd . . . . .		4	4	..
Home Management . . . . .		..	2	5
Mathematics . . . . .		5	3	..
Sewing . . . . .		..	..	5
		—	—	—
		31	31	32

\*Each school day is divided into eight 45-minute periods.

The faculty is still unanimous in its recommendation of two years ago that each course should be increased from three to four years at the earliest possible moment the necessary equipment and additional instructing staff can be secured. There is already liberal provision for special students in Agriculture, and should the Board indorse the faculty's recommendation for a short course in dairying and creamery operation with the opening of our new creamery building, the extension of the regular course in Agriculture from three years to four will work hardship to none. Similar provision can also be made for students in Mechanics and Household Arts, though experience has taught us that the minimum age of our special students should be at least eighteen years.

It will be noted that English, mathematics, drawing, and American history and government are common to all courses, and must be fundamental in our curriculum since our students are admitted to regular standing upon completion of the eighth grade of the grammar schools. A knowledge of the mother tongue is of first importance, and, accordingly, to English is assigned five periods per week throughout the first two years of the course. In the third year these five periods are allotted to American history and government. Standard high school efficiency in the academic subjects as far as the time allows, as well as in the technical work, is a necessary requirement for graduation.

#### BUILDINGS.

The household arts building, for which an appropriation of \$30,000 was made by the legislature of 1905, was ready for occupancy in April, 1907. The Household Arts Department finds its present requirements splendidly met in this building. Its dimensions are 42 by 103 feet. The well lighted basement contains the sloyd room, equipped with benches and tools for a class of twenty, locker room, lunch room, lavatories, and store room. On the first floor is a small reception room, the sewing rooms, and also a class room and laboratory now used by the botany department. The second floor accommodates the cooking classes. The kitchen, equipped with both wood and gas ranges, provides room for a class of twenty-four girls. There are also on this floor the dining room, pantries, and two large class rooms. The cost of construction of this building was \$27,000, and of equipment \$3,000.

The greenhouse, 36 by 40 feet, divided into two equal sections, was ready for use early in 1907. The cost, including heating plant, was \$1,867.

The plant propagation laboratory, ready for use the spring term of 1908, measures 30 by 42 feet and contains a well lighted work room for the use of classes, a tool room, and a seed room. In this building

is done the planting of seeds in flats, transplanting, making of cuttings and the like. Insect incubators here also give the student opportunity to study the life history of the common insect pests. The cost of the building and its equipment was \$2,000. In the summer of 1908 a lath house  $14\frac{1}{2}$  by 40 feet was added at a cost of \$75.

The construction of a concrete incubator cellar is a valuable addition to the poultry plant. The structure measures 24 by 36 feet and cost \$800. It is hoped that future appropriation will soon make it possible to add a class room and student work room above the cellar, the walls of which furnish a complete foundation.

The forge shop has been extended from its former dimensions of 40 by 56 feet to 40 by 100 feet. The shop now contains sixteen double down-draft forges of modern type, with other necessary tools for student use. The cost of the forge shop extension was \$1,528. The cost of additional equipment was \$1,402.

The machine shop, 40 by 100 feet, is uniform in appearance and general structure with the carpenter shop and the forge shop. The equipment of the machine shop includes six iron lathes, polishing lathe, universal milling machine, drill presses, shapers, power emery wheels, cut-off saw, and a variety of high-grade finishing tools and measuring devices. The cost of construction was \$5,700, and of equipment \$7,295.

Woodworking machinery purchased in the summer of 1907 was installed in the present carpenter shop. Two thousand and seventy-five dollars was expended for four turning lathes, band saw, planer, swinging cut-off saw, and the installation of same with minor accessories. All machinery of the various shops is now motor-driven.

In the power house and electrical laboratory there have been added an 8 by 12-inch Skinner automatic engine, a 30 K. W. Fort Wayne generator, an 8 K. W. rotary convertor, a 5 K. W. A. C. generator, 4 special transformers, 112-cell storage battery, an 8-horsepower horizontal steam engine, steam engine indicator, boiler testing set, and a variety of instruments, tools, and small apparatus. The cost of this equipment was \$2,208.

April 15, 1908, a contract was awarded J. Maino & Son of San Luis Obispo for the erection of two five-room cottages, at a cost of \$3,846 for the two buildings. One cottage will be occupied by Mr. S. C. Griffith, the farm foreman, and the other by Mr. A. D. Sinclair, the head gardener.

June 12, 1908, contracts were awarded the F. O. Engstrum Company of Los Angeles for the erection of a creamery building and a boys' dormitory, the creamery to be erected at a cost of \$9,980 and the dormitory at a cost of \$20,765, the State in each instance to make the necessary excavation. The creamery, 40 by 60 feet, with boiler room in

addition, ready for occupancy in January, 1909, will house a model plant for instruction in the arts of butter and cheese making. On the first floor are the boiler room, receiving room, separator and churn rooms, together with provision for installation of a complete refrigerating plant. On the second floor are the class rooms, laboratory, reading room, instructor's office, and operator's quarters. The new dormitory contains fifty-two rooms, including matron's suite, large living room with fireplace, tub and shower baths, and lavatories. Heat will be furnished by an independent oil-burning plant located in the basement of the building. This building will not be ready for occupancy before the middle of the winter 1908-09.

Plans and specifications for the propagation house, forge shop extension, machine shop, creamery, and dormitory were received from the State Department of Engineering.

#### FARM.

A most valuable addition of 30 acres of rich bottom land has been added to the original farm of 281 acres, making a total of 311 acres. While a large part of the old farm was valuable only for grazing and the production of hay, the recent addition gives us opportunity for the production of more alfalfa and other forage crops. The poorer land has been enriched to some extent the past two years by the addition of barnyard manure, and its productivity visibly increased. A yield of two tons per acre of barley hay was realized this year on some of the rolling land where not more than one ton per acre had been procured before in the history of the school. About forty tons of oat hay and fifty-four tons of barley hay, besides eighteen tons of alfalfa, have been harvested this year. No silage has been put up, but we are still feeding from a lot of over 100 tons of corn that was ensiled in 1907. In the spring of 1908 a number of cereal experiments were carried on in connection with the State Experimental Station of Berkeley, together with some grass and forage experiments of our own. Further cereal experiments will be conducted next year in coöperation with the State Station. Mangel wurtzels have proved a valuable crop with us, and several tons have been raised for the dairy cows this year.

The stock equipment has increased in number and value. In horses we have seven pure-bred Percheron mares, two Clydesdales, and five grades, the pure-breds being valuable representatives of their respective breeds. In cattle we have about forty animals, representing the Ayrshire, the Shorthorn, the Jersey, and the Holstein-Friesian breeds, and in swine about forty animals of the Poland-China and Berkshire breeds are on hand all the time.

Our live stock transactions have necessarily been largely of a purchasing nature, though in the cattle and swine departments we have already begun to realize an income from the sale of young stock. This gives promise of material increase in the near future, and we will soon be producing more horses than can be used on the place, which of course will mean material profit.

The farm is very badly in need of a commodious barn, which could be made headquarters for farm operations, and would furnish stable room for stock, storage room for food stuffs of various kinds and farm seeds, and housing for machinery. Such a structure would furnish room where farm machinery could be studied by the students, study of farm crops carried on, and where experiments both in general agriculture and animal husbandry could be handled.

The construction of cottages upon the grounds for the farm foreman and the head gardener is a step in the right direction. These men need to be near their work, for, as has been pointed out, a man with a family in a comfortable home near his work is a far more dependable quantity than a single man who must reside at some distance. In the near future homes should be provided for the dairyman, teamsters, and possibly one or two other employees.

#### GROUNDS.

When we consider that our first buildings were erected only a little more than five years ago in the middle of a roadless barley field, the improvement of our grounds is a feature of which the institution may well be proud. The trails of 1902 and 1903 have been transformed into more than two miles of crushed rock road, now equally good in winter and summer. About 275 yards of rock excavated from the site of the dormitory now under construction has been used in road-building and grading in front of the shops. The excavation of this rock and hauling cost one dollar per yard, and to this extent our roads were improved practically without cost, except for labor of spreading the rock hauled. Much of our road material has been hauled by our ranch teams at slack seasons in the routine of seeding and harvest. The petrolithic pavement on the roadways immediately surrounding the school buildings is a marked success. The total amount directly spent on roads and culverts in the life of the institution is \$3,300, \$2,000 of which has been expended in the last biennial period.

The almost treeless fields of 1902 are now growing some three thousand trees and shrubs. The shrubs and many of the trees are small, but the eucalypti make a remarkable showing, a considerable number having grown fifty feet in the past five years. About one half of a grove of two hundred and fifty eucalyptus trees, set eighteen months ago east

of the household arts building, have been growing at the rate of a foot per month. Excellent showing is already made by twenty-five Casuarinas. Other varieties of trees are acacias of various species, Monterey pines, Araucaria, pepper, and numerous scattering specimens. In December, 1907, one hundred and eighteen palms of the Phoenix Canariensis variety were set in rows on either side of the driveway leading from the school buildings toward San Luis Obispo. Our policy in tree planting is to put out each season only such a number as we can reasonably expect to care for and get well started, rather than to plant very large numbers and trust to survival of the hardiest for permanent growth. A small number of plantings well cared for, especially the first season, will produce more trees in ten years than wholesale plantings left to battle unaided against the long, rainless seasons.

The beginning of a new group of dormitories on the south portion of the school farm now imposes a new task of road-building and landscape gardening. To meet these new demands together with the maintenance and necessary improvements of the older portion of our grounds \$8,000 should be expended in the next biennial period.

#### WATER SUPPLY.

The water at present available for use of the institution is the supply pumped from a well 28 feet deep, dug near the creek, and that which flows from two small springs. The spring water, stored in a 40,000-gallon concrete reservoir on the hillside 200 feet above the buildings, is the reserve for fire protection and emergency of any kind. While this supply very well met the earlier needs of the institution, additional dormitories, increased number of plantings and extent of grounds, together with more urgent necessity for irrigation, demand a greater supply. This greater supply most fortunately was made possible through the recent purchase of thirty acres of bottom land adjoining the school's original property. A test well put down near the creek bed on the new land proved conclusively that an abundance of water exists. On account of the formation, however, a serious cave-in made it impracticable to proceed with the first well, and a new plan will accordingly be followed out the coming summer. We have proved that water is available for greatly increased domestic needs and for irrigation; the next step must be development. The value of the water supply alone is worth to the institution three times the \$15,000 required to buy the desired thirty-acre tract, and future years will only emphasize the wisdom of this purchase at this time.

## FARMERS' INSTITUTES.

Each year in May a farmers' institute under the auspices of the State University has been held at the school. Details of arrangement are perfected by the Polytechnic Faculty, some of whom annually take part in the program, with speakers from abroad. In May, 1907, the general topic of discussion was Animal and Dairy Husbandry, and in May, 1908, Agricultural Education and Intensive Agriculture. Institute day is also a general exhibition day of the school's equipment and the handiwork of the students. Visitors spend the entire day on the grounds, the noon hour being the occasion of an enjoyable basket picnic. The day is now looked upon as an established feature of the school year, furnishing as it does excellent opportunity for "extension work" in agricultural education among residents of a large community.

## PUBLICITY.

An annual catalogue issued in the spring is the principal method of placing information before the public. The edition of 1907 numbered eight thousand 24-page booklets, and that of 1908 five thousand of the same size. The cost at the State Printing Office was \$221.50 for the first and \$144.25 for the latter. Through the coöperation of county superintendents the catalogues have each year been mailed to the grammar school graduates of from twenty to thirty counties. The remainder of the edition each year is mailed to teachers and to the constantly increasing number of applicants for information. News letters are also sent from time to time to various newspapers and publications of the State.

The school's exhibit at the State Fair of 1908 was adjudged the best educational exhibit, and was the means of advertising the advantages of the school to people from widely scattered sections of the State. The stock exhibit consisted of five Percheron mares and one Clydesdale filly two years old. Five first premiums and two seconds were awarded the animals, the cash prizes amounting to \$86. The educational display consisted of carpentry and forge models, and a large collection of photographs illustrating the work of the school.

During the summer of 1907 Instructors William F. Ewing and LeRoy B. Smith visited the coast counties from San Francisco to San Diego, Riverside and San Bernardino, and part of the San Joaquin Valley, personally presenting to county superintendents, teachers, and residents the work of the school. Photographs and literature aided our representatives in disseminating information. Both report cordial reception in all localities visited. This kind of advertising is undoubtedly the most effective that has been done in the interests of the institution. Should the question be asked, "Why advertise a public

institution?" we may point to the fact that various educational agencies of both the National and State governments are unused by large numbers of people because of lack of knowledge of the very existence of means of education for which support is drawn from public taxation. The advertising which our representatives did in about fifty days of work covering the area mentioned cost the school \$121.30.

#### THE SCHOOL LIFE.

The social life of students centers at the school just so far as such a condition can exist without a complete dormitory system. Frequent receptions and social affairs on Friday evenings are held in the assembly hall, members of the faculty always being present and joining in the evening's program. Receptions to new students and in the spring entertainment of the senior class by the juniors are established social features. Commencement week of 1908 was made particularly enjoyable by the return of a large percentage of the graduates of the earlier classes.

Last year thirty-three per cent of our students not residing in their own homes in San Luis Obispo earned a considerable part of their living expenses during the school year. The school offers to students such employment as janitor service, dairyman's assistant, occasional kitchen service, etc. The power and lighting plant is operated by students under the direction of the Mechanics Department. The student engineer who is on-duty part of each school day and every other evening is paid \$45 per month. A second student engineer is paid \$22.50 per month. Compensation allowed student janitors and assistants in various capacities ranges from \$5 to \$20 per month, only one or two being employed at the higher figure.

Outside of the school students find good homes in the community, where opportunity is given to exchange their services for room and board, or both. Student service, in the main, has been very satisfactory, and thus far the demand for this service active.

As my predecessor has well pointed out in his last report the unity and completeness of school life would be greatly enhanced were it possible for a majority of the married members of the faculty to occupy residences upon the grounds. I am aware that the legal right of our governing board to issue a lease of land does not now exist. Were this right to be secured by the necessary legislation, I believe that faculty members would soon be inclined to purchase leases for the building of homes in close proximity to their work. The presence upon the grounds of the homes of at least a portion of the faculty would do much to lend a home atmosphere to the entire institution and to unify the interests of the school and its workers.

## DEMAND OF PATRONS FOR DORMITORIES.

Our urgent call for dormitory accommodations for students is not based upon a theory of the faculty that students ought to live in dormitories, but is made first because of the insistent demand of parents who are sending, or are contemplating sending, sons or daughters to this institution that their children while away from home live at the school and under its supervision. It is true also that the faculty believes from actual experience that the majority of our students should be housed at the school for its more perfect school life, and for the reason that students living in our present dormitory have in the past profited more from their school work than the average nonresident student boarding outside. Many good homes in San Luis Obispo are open to students, but it must be remembered that a large proportion of our students are from fifteen to seventeen years of age, hence a natural disinclination on the part of many parents to send the young son or young daughter away from home to board with families in a strange town. Our letter file shows constant inquiries of which the following is a good example: "Will you kindly let me know whether or not it will be possible for my son to live at the school? I should prefer it so if it can be arranged." Others of more decided opinion ask if the young man or young woman can reside at the school, and then state that if dormitory accommodations are not available they will find it necessary to consider some other institution. The inquiry for dormitories for girls has always had to be met with the reply that no dormitory accommodations were as yet provided for young women. Our one dormitory now provides for fifteen per cent of our students, while demand for residence at the school is made for approximately sixty per cent of the enrollment. Some prospective students have been kept away entirely owing to unwillingness of parents to allow children to reside away from home without immediate supervision of the school authorities. A portion of our students nonresident in San Luis Obispo will always desire to live outside of the school, since a considerable number find opportunity to exchange their services for room and board in private homes in the community.

It is to be earnestly hoped that a liberal allowance for dormitories will be made by the coming legislature. The announcement of increased dormitory accommodations will immediately increase the enrollment very materially as soon as the buildings can be occupied. The dormitory now under construction will provide for fifty students. The cost of this building, including partial furnishings, will be \$500 for each person accommodated. In common with my predecessor, I am convinced that several small dormitories will render the discipline and the problems of school life much easier than a massing of five hundred students in

two or three buildings. The school life will be much more satisfactory in every way if the maximum number of residents in each dormitory never exceeds seventy-five, or one hundred at the outside. A central dining hall may accommodate the occupants of a number of dormitories. If the coming legislature will provide dormitories for two hundred boys and girls, students will be ready to occupy as soon as the buildings can be made ready for use. The fifty-room dormitory for which the contract is already let will not be large enough to provide for one half the number of students desirous of residing therein upon its completion.

#### STUDENT ACTIVITIES.

Much credit is due the student body for the very helpful service their well-organized reception committees have rendered in welcoming new students at the beginning of the school years. These committees, made up of older students, on opening days meet the trains for the purpose of assisting new students in finding their way to the school and to their new homes and in becoming acquainted with their new surroundings. This service, together with an opening reception planned by old students for the new, does much to make the young strangers feel at home from the start.

The continued publication by the students of "Polytechnic Journal," established in 1906, has served as an incentive to students to put forth some effort along literary lines, and has been from the beginning very helpful as a means of advertising the school. Practically all matter published is written by students, and the business management of the enterprise is entirely in their hands. Mr. E. J. Berringer is the faculty representative on the staff.

A debating society fosters interest in debate and encourages a desire to gain efficiency in public speaking. Debating contests with other schools in this section of the State resulted in the winning of the season's championship for the Polytechnic, both in 1906-07 and in 1907-08.

The faculty believes in the encouragement of athletics, and constant faculty coöperation with student interest in athletic sports has guided the various contests along safe and rational lines. The San Luis Bay Athletic Association is the organization of secondary schools of San Luis Obispo and northern Santa Barbara counties for the promotion of inter-school athletic contests at tennis, basketball, football, baseball, and track events. Near the opening of the fall term in 1908 there was organized by Instructor I. J. Condit a class in physical culture for those students not taking part with the school athletic teams.

Other student organizations are Glee Clubs for boys and girls and an Agricultural Club fostered by the efforts of Instructor C. W. Rubel.

Regular religious instruction is not permitted by law in any State

school. To meet the need of training in religious work and life, no better non-sectarian organization has been found than the Christian Association, branches of which are found in nearly all institutions of higher learning, both State and private. The faculty believes that every encouragement should be given an organization of this kind among the students of Polytechnic School.

#### COST OF VOCATIONAL TRAINING.

Vocational education must of necessity be expensive. The training which vocational teachers must have makes them especially valuable in the industrial world. School boards, therefore, if they would retain the competent teachers, must offer as much compensation as these technically trained men can demand and can secure in the industrial world. The vocational teacher must ordinarily have smaller classes than the usual grammar school or high school, and he must devote a longer class period to his students than is necessary with purely academic subjects. It is entirely possible, for instance, for an instructor in history to meet three or four classes of twenty-five or more members each, while the instructor in carpentry, machine shop practice, or stock judging should spend the entire three or four periods with his one class of twenty-five in the shop or on the stock farm. Shop practice, field, or laboratory work can not profitably be divided into the usual forty-five-minute class periods. The equipment necessary for the farm, the shop, and the various laboratories is expensive, and there must be constant outlay for materials. Professors Dutton and Snedden in their recently published book, "Administration of Public Education in the United States," in summarizing the results of their investigation, say, "In general—vocational education of all sorts is highly expensive. \* \* \* Full time vocational training (as opposed to continuation or evening work) requires an expenditure of from \$75 to \$300 per year for each student. In some lines of technical instruction, and in trades' instruction employing materials extensively, the cost may be even greater."

In Polytechnic School last year the cost to the State for actual running expenses was \$275 per pupil for the year. This figure will decrease as enrollment increases; however, for comparison it is gratifying to note that the cost per pupil here last year was no greater than in some similar older institutions having a greater number of students.

#### TECHNICAL FEATURES OF THE COURSES.

##### *Agriculture.*

The principal features of the course in Agriculture are here reported in brief by the instructors in the various lines. Mr. Frank E. Edwards of the Chemistry Department here describes a part of the work he has been conducting the past year.

The instruction in agricultural chemistry is for five periods each week throughout the third year of the agricultural course. One period is devoted to lecture and class work along the lines of plant and animal chemistry, with occasional reference to the present day application of chemistry to the manufacturing industries closely related to agriculture. Each student is required to do thorough library research work on some particular topic and prepare a paper for delivery before the class. Three or four papers are prepared by each student during the year. Four periods are utilized in agricultural analysis in the laboratory. The student spends this time in the careful analysis of soils, fertilizers, grains, forage crops, foods, milk, butter, cheese, and other agricultural materials in which he may be interested. The course seems to be quite popular, and there is a general demand from the students for additional time for analytical work. As soon as it can be accomplished without interfering with the work of the other branches, I recommend that the time be increased to eight or ten periods each week.

Advanced students are encouraged and aided in taking additional analytical work on soils and agricultural products. This year one student is in addition to the regular outlined course taking about ten periods each week in the chemical and physical analyses of soils. Two other students are making some soil studies outside their regular class work.

The course in general chemistry is for all second year classmen and runs for eight periods throughout the year. Three periods are utilized in recitation and lecture work, and five periods in laboratory practice supplementary to the class-room instruction. During the spring term considerable time is devoted to instruction in elementary qualitative analysis. The ground covered is fully equivalent to the State high school course in chemistry.

The instruction in soils and fertilizers is for five periods each week throughout the first year of the agricultural course. The course is necessarily somewhat elementary, as it precedes the study of chemistry and physics, both of which are valuable prerequisites to soil study. Two periods are devoted to class-room instruction and three to field and laboratory practice. The course includes elementary instruction in the chemistry of the soil, agricultural mineralogy, soil formation, tillage, conservation of moisture, irrigation and drainage, use of fertilizers, rotation of crops, dry land farming, alkalis, and other related topics. The laboratory and field practice includes soil sampling, mineral collecting, moisture and temperature studies of soil plats, the effect of fertilizers, mulches and manures on various soils and crops, tillage effects, alkali effects, elementary chemical and physical soil tests, and other similar experiments.

In general, the equipment for all the classes in the department is excellent. I believe we have more and better equipment than most schools of like scope and character throughout the country. The equipment for agricultural analysis has been largely accumulated during the last two years, but the class has doubled in the time and the equipment is not yet as extensive or complete as it should be. It is the wish of the instructor that we may increase the apparatus as much as possible within the next year, so that we may be able to fully meet the growing demands for special work along agricultural chemistry lines. This year we have added an excellent Sartorius analytical balance, a large hand mill for grinding grain and forage samples, and an electric crucible furnace, besides many of the smaller species of apparatus usually found in an analytical laboratory.

The present laboratory space is much too small considering the size of the classes and the different kinds of work being carried on at the same time. It is impossible to get the best results in a laboratory which is used also for general chemical experiments. I would suggest that at the very earliest possible day another laboratory be fitted up for agricultural chemistry and soils. This should accommodate, if possible, two sections of twenty-five men each. The department is also very much in need of a large store room for chemicals and apparatus.

A very large portion of the students show a marked interest in the various studies and apply themselves diligently, but I am of the opinion that a four-year course, with more culture studies in the first two years and several electives in the senior, would increase many fold the power of the student to assimilate the technical studies and in like ratio increase his usefulness as a citizen.

The report on our work in plant propagation, botany, and horticulture has been prepared by Instructor Ira J. Condit.

The work in botany for the first year students in Agriculture covers eight periods during the week, three in the class room and five in practical work in the laboratory, garden, and propagation house. In the laboratory the boys study the germination of seeds; seed testing; dispersal of seed; the young plantlet as it comes from the ground; functions and form of roots, stems, and leaves; source and method of assimilation of plant food; minute structure of the plant body under the compound microscope; study of flowerless plants including bacteria, yeasts and moulds; formation of flower and fruit; and the relationships which plants bear to one another. The work includes a short course in forestry, in which the important timber trees are considered, with the best methods of conserving and utilizing the present lumber supply of the United States as well as providing for future needs.

The practical work consists in the propagation of plants by cuttings of hard and soft wood, by seed, by bulbs, by layering, division, etc.; the propagation and care of ornamental plants in the greenhouse; experimental work in crossing and breeding plants; growing of mushrooms; selection of varieties, planting, cultivation, irrigating, and harvesting of garden vegetables; study of weeds in the field and methods for their eradication; and the value and use of cover and green manure crops. The garden work this season will include variety tests of peas and lettuce, about fifty varieties of peas and forty of lettuce being tested as to quality and yield in our conditions of soil and climate.

Especial attention is paid to the raising and planting of young trees such as eucalyptus, pine, acacia, catalpa, etc. The department has been quite fortunate in receiving several different lots of plants and seeds from the Department of Agriculture at Washington as follows: forty-eight living specimens and twenty packets of seed of economic and ornamental plants; ten species of eucalyptus seed from Australia; twenty-five herbarium specimens of plant diseases; eighteen packages of seed of forage crops for experiment; as well as a large number of specimens of economic and interesting insects. There are now twenty-two species of eucalyptus growing on our grounds and the seed of several more ready to plant soon. A few cuttings of spineless cactus have just been started growing, while several young trees of Burbank's hybrid walnut will be ready to set out in the spring.

The botany work for the third year students in Household Arts is similar to that of the other course for the first term; in the second term the study of flowerless plants is taken up, beginning with the single-celled algae, through the fungi, mosses and ferns to the most highly developed form of plant life. The third term is spent in getting acquainted with and making collections of native wild flowers, studying the relationships of plants and the environment in which they live and grow.

In the second year of the Agricultural course eleven periods during the second term and seven during the third term are devoted to the work in horticulture. The selection of orchard soils and sites, and the principles of orchard management are first considered, followed by a more thorough, detailed study of the various orchard fruits, their propagation, planting, pruning, care, and varieties. The practical work consists in budding and grafting nursery stock, top working old trees, pruning, planning and laying out of orchards, judging varieties of fruit, spraying for injurious insects and diseases, and the planning of, and selection of plants for, ornamental grounds. A small orchard of citrus trees, consisting of lemon and orange trees, was set out last spring and is growing rapidly.

Animal and dairy husbandry is in charge of Instructor C. W. Rubel, who reports as follows:

The Department of Animal Husbandry has made several strides of development the past two years. The library has been increased by the addition of herd books of some horse and swine breeders' associations, as well as new works along the lines of judging, breeding, feeding, and management of live stock. The increase in quantity and quality of the live stock on the farm and the increased willingness of local stockmen to coöperate have both helped very much in making the courses in animal husbandry more efficient and practical. Courses of study in judging, breeding, feeding and management of live stock are all given, and this includes both class room and practical work. Efforts are made all the time to keep the students interested in their work, and to this end testing and feeding experiments are inaugurated and put under student control. Last winter feeding experiments to determine rate and cost of gain, as well as relative value of food stuffs, were carried on with four lots of swine. The dairy herd tests began two years ago, are still being carried on, and exact records of the production of the herd are being kept by the third year students in Agriculture. The new creamery will aid this work by providing increased class room facilities, but we are sorely in need of a judging pavilion in which to carry on the work of live stock judging. The installing of stock scales has been of great help in handling our animal husbandry experiments, but more room is badly needed, and it is hoped that by the erection of a commodious barn room will be provided where animal husbandry work may be carried on in connection with the work in general agriculture.

In the Dairy Department courses of study are given in milk production, composition, testing, separation of cream, manufacture of butter, cheese, etc. The laboratory work has heretofore been carried on in rooms in the basement of the main building, using a main creamery 20 by 45 feet, and a small cheese curing room and store room. The creamery is equipped with Babcock test apparatus, four cream separators, two combined churning tanks, a 50-gallon vat, cream ripener, and apparatus for the manufacture of cheese, as well as apparatus necessary for testing milk and milk products for adulterations.

The new creamery, for which money was appropriated in 1907 and which is nearing completion at the present time, offers greatly increased facilities for instruction along dairy lines. In addition to furnishing class rooms and a home for the Dairy Department, we will have a modern creamery, fitted with all the apparatus found in large commercial creameries, including cold storage rooms and refrigerating apparatus as well as an independent heat and power system.

It is our intention to operate the creamery on a commercial scale, and students will be required to do the work and to meet and solve problems such as they would find in a large creamery. Owing to limited facilities in the past we have never run a special creamery course. The opening of the new plant, however, will provide excellent opportunities for such a course, and it is the intention to run a special six months' course for young men desiring special work in creamery operation, beginning the course January 1st. This course will include instructions in handling engines and refrigerating apparatus as well as in creamery work.

The Department of Poultry Husbandry offers instruction in the principles of establishment and maintenance of a commercial poultry plant on scientific principles. Mr. William E. Coleman, who took charge of this department July 1, 1908, has written of his plans for the development of this work.

The object is to make the Department of Poultry Husbandry self-supporting, and to demonstrate that scientific principles may be carried out advantageously from a commercial standpoint. We also hope to carry on experiments in incubation, brooding, and other phases of the poultry business with the object in view of some day being able to publish the accumulated data, thereby giving the general farmer the advantage of our experiments.

The needs of this department at present are an additional story to the incubator cellar to be used for a class room, feed room, and office. Also proper and permanent houses for the breeding and laying stock, colony houses for the growing chicks, a residence for the attendant, and enough money to grade and level the poultry ground so that it might all be planted to alfalfa, as we hope to be able to do this year.

We are in need of more incubators so that we will be able to fill our brooder house with chicks from one hatch. This brooder house was remodeled this summer and fitted with a hot water system for heating, and will accommodate 1,200 chicks.

The school's work in animal husbandry, dairying, and horticulture is well established and good results have been obtained. Mr. Edwards is also conducting splendid work in agricultural chemistry, but it is recognized that the school has never had a trained agronomist. The recent acquirement of an additional thirty acres of rich level land will furnish a splendid field laboratory for a department of agronomy, and it is sincerely hoped that the trustees may next year find it possible to secure the right man for this highly important department. The Agriculture Committee has submitted to the Director a proposed third-

year course of study, outlining required and elective work under four groups, viz. :

- I. Agronomy.
- II. Horticulture.
- III. Animal Husbandry.
- IV. Dairying.

Poultry Husbandry may become a fifth major with future development of the poultry department.

#### *Mechanics.*

Vice-Director Waters reports for the Mechanics Department as follows :

The object of the course in mechanics is to give to men having grammar school training a three-year course that will continue the study of the necessary academic branches and give the most complete practical training along mechanical lines that the limited time permits. While not making a finished tradesman of the student, the course gives the foundation training that enables him to work easily into his chosen line. Throughout the course the time is equally divided between class room and practical work, the morning being spent with the various studies and the afternoon devoted to shop and laboratory.

Mathematics and English or history are carried five hours a week for the three years. Freehand drawing during the first term teaches simple and accurate sketching. Mechanical drawing, given throughout the year, takes up plain, neat lettering, the important problems of geometric drawing, and working out complete detailed drawings of various mechanical models, as shaft hangers, engine parts, valves, etc. The student takes all the dimensions direct from the model and works out sections, elevations, and details. This work is not designed to fit men for the commercial drafting room, but rather to give a thorough understanding of working drawing and the ability to make neat and clear drawings of machine parts.

Most of the afternoon time of the first year is devoted to forge and carpentry work. In the carpenter shop the first few months are devoted to special exercises in which the student learns the use and care of the various tools, and the accurate cutting and fitting of the joints commonly used in carpentry and cabinetmaking. One requirement is the making of a complete model of the framing of a house, all cuts for the rafters being laid out with the square. The shop is equipped with a planer, band saw, rip saw, swing cut-off saw, and five turning lathes, all of which are constantly employed by the students in the latter part of their work. This is work in which the boys take great interest, many finishing the required exercises in much less than the allotted time. In

our shop accommodations and number of instructors, as the variety of the work would necessarily be greater. Pattern making, plumbing and foundry work are important trades we can not touch at present. Each of these needs a special building, with an instructor in charge free to devote his whole time to the men specializing in his line.

The most serious problem confronting us in giving the course as it now stands is lack of room. All shops and laboratories are so crowded with regular students that it is now impossible to give all the work of the course as scheduled. The capacity of the shops and laboratories would be doubled if an instructor could devote his whole time to the work of each. At present all the shop instructors have their mornings occupied with classes. With these conditions we can offer no inducements to special students. If the shop room and time of instructors were available many students, older than the regular men, would be glad to take short courses along special lines.

The most pressing needs now are further equipment in the machine shop and a larger electrical and mechanical laboratory. Plenty of space is available for additional machines in the machine shop. An iron planer would add greatly to the variety of work possible in the shop. Several additional lathes, drills and shapers are needed for the proper accommodation of the men.

The present electrical and mechanical laboratory shares a small room 36 by 36 feet with the school power house. As all the senior mechanics have regular work here the quarters are very crowded. A great deal of electrical apparatus that should be placed in permanent position for convenient work must be put up and taken down constantly to economize space. It is advantageous to have the mechanical laboratory and power plant in the same building. The two could be comfortably housed in a structure 40 feet by 100 feet similar to the present shops.

The students show great interest in all the work of this course, notwithstanding the crowded condition and limited equipment. Many are self-supporting and specially anxious to get every possible benefit of the course. As the enrollment grows, further equipment must be provided to hold the work at the present standard. We trust, however, that provision will be made to strengthen and broaden the course in mechanics.

#### *Household Arts.*

The following statement prepared by Miss May Secrest, instructor in domestic science, outlines the work of her department:

During the past biennial period the Domestic Science Department has been for a little more than a year in the newly completed household arts building, having moved in March, 1907. Previous to that time a

small room in the administration building was occupied by the department, and the work was much hampered because of extremely crowded quarters. While in this room, however, during February, 1907, the junior and senior girls prepared and served a four-course luncheon to a delegation of assemblymen and the trustees and faculty of the school—one hundred and fifty people.

Since being housed in the new building the department is probably as complete as any of its kind on the Pacific coast. The second floor of the building, with the exception of the girls' rest room and a class room occupied by the English department, is used for domestic science work. The department now consists of a large, excellently equipped kitchen laboratory, a dining room well arranged for serving meals, a butler's pantry, store pantry, class room, instructor's office, and in the basement of the building a store room and a laundry. The kitchen laboratory will accommodate twenty-four girls—each with a two-burner gas stove and equipment complete. A fireless cooker, a bread mixer, and other modern helps and conveniences have been added as object lessons for the students.

The girls in the second year have made a study of the composition, production, manufacture, and preparation of foods. This was done by means of lectures, reference reading and a study of the Government bulletins bearing upon such topics. In the laboratory a course in plain cookery was followed—vegetables, fruits, eggs, meats, breads, salads, and beverages.

The senior girls study the canning and preserving of fruits and vegetables, and take advanced and fancy cooking, and cookery for the sick. They have made and worked out dietaries for an adult, a child, and for a family of six. Each girl prepares and serves a luncheon or dinner to members of the family or other invited guests. The senior girls prepare and serve luncheon to the trustees at their regular meetings, thus acquiring additional experience in serving meals.

Instruction has also been given to the seniors in house construction and sanitation, marketing, care of food in the home, household accounts, and home nursing and laundering.

Miss Harriet Howell, instructor of the department, outlines the work in domestic art as follows:

All first-year girls are assigned to work in the department for eleven periods a week. The second-year girls spend time not otherwise employed in the sewing department. In the spring term the senior girls who desire it are given an opportunity to make their class day and graduation dresses.

The course of work consists of thorough drill in fine handwork. The

student makes a set of small models, which are placed in a book, together with a written description of the work. After the handwork has been completed the use and care of a machine is taught. Patterns for undergarments are drafted, and the garments are cut and made. The use of a tailor system is taught and each student is required to draft patterns, cut, fit, and make a woolen dress skirt, fitted lining and shirt waist for herself.

In the third term several weeks are devoted to work in millinery. Students are taught to renovate old hats and materials, wire, bind, face and line hats, also to make and cover both wire and buckram frames.

Although it has not been the purpose of the department to train professional dressmakers and milliners, yet we find that several of our graduates are now employed in shops or private homes and are entirely self-supporting. In the spring of 1907 we moved into our comfortable and convenient quarters in the new household arts building. During the spring of 1907 the classes in millinery were taught by Mrs. Roadhouse, and the following school year Miss Grace Fordyce had charge of the department, and did excellent work.

Training in sloyd is afforded girls one afternoon each week throughout the year. Mr. L. E. Pearson, instructor in charge, has outlined the course as follows:

Sloyd consists of a course in cardboard construction during the first six weeks, followed by wood work, which occupies the remainder of the year. The six cardboard pieces attempted, as napkin ring, portfolio, and box with hinged lid, have been carefully chosen to bring in the various processes and to show the necessity for neat, accurate work. As far as possible throughout the year's work, attractive, useful models have been selected rather than mere exercises. The exactness of the cardboard work has proven very helpful in obtaining careful results in wood. A progressive series of models is required, ranging from a rectangular block to be squared up to more complicated, interesting models made up of several pieces, as the sleeve board, picture frame, keyed book rack, and salt box. These are made from blue prints, blackboard sketches, or student drawings. In the last five of the exercises, while the general proportions and measurements are given, the shape of certain parts are to be designed by the student, and at least one of these to have some appropriate decorative design carried out in carving, pyrography, stain, or hammered copper, according to the choice and ability of the student.

## THE LIBRARY.

The library, in charge of Miss Edith Richardson, contains 1,400 volumes, classified as follows:

Agriculture.	Horticulture.
Astronomy.	Literature.
Botany.	Mathematics.
Building.	Philology.
Chemical technology.	Philosophy.
Chemistry.	Physics.
Domestic economy.	Physiology and hygiene.
Drawing.	Religion.
Education.	Sociology.
Engineering.	Zoölogy.
Geology.	History.

Bound volumes of magazines, dictionaries, and encyclopedias are included in the number of volumes mentioned above. Thirteen weekly, twenty-five monthly, two semimonthly, and two quarterly magazines are being received regularly. These magazines are along the lines of work done in Polytechnic School. United States Department bulletins and reports, Experimental Station bulletins and reports, and Library of Congress reports and documents are sent to the school. During the summer of 1908 the school library was recatalogued according to the Dewey decimal classification, a standard system. The great need of the library is more provision for its administration. It has been suggested by several instructors that a short library course be given to freshmen students each year, a course covering such points as a workable knowledge of the system of classification and cataloguing in use in the school library, the care and handling of books, how to use reference books, and, in general, to cultivate an acquaintance with and a love for books which will lead the student to independent work along this line. The present librarian, by reason of other duties, can devote only about one third of her time to the library.

## FINANCIAL NEEDS.

In order to meet the demands that are already upon us or immediately before us, appropriations for the following purposes should be made by the next legislature:

Dormitories for 150 students, including dining hall.....	\$80,000 00
Completion of barn and equipment.....	17,000 00
Poultry houses and equipment.....	4,000 00
Development of water supply and irrigation system.....	6,000 00
Sewer system .....	5,000 00
Two cottages for employees .....	5,000 00
Creamery equipment, including refrigerating plant .....	4,000 00
Mechanical and electrical laboratory.....	15,000 00
	<hr/>
	\$136,000 00

In response to the request of the State Controller for a statement of amounts needed for maintaining the school during the next biennial period, beginning July 1, 1909, the following estimate has been submitted:

Support and maintenance, including purchase of stock and equipment for farm and laboratories.....	\$32,000 00
Salaries of officers, teachers, and employees.....	64,000 00
Care and improvement of grounds.....	7,000 00
Library .....	1,000 00
Expenses of Trustees.....	800 00
Printing, binding, etc. ....	1,000 00
	<hr/>
	\$105,800 00

Respectfully submitted,

LERoy B. SMITH, Director.

## REPORT OF THE SECRETARY OF THE BOARD OF TRUSTEES.

*To the Board of Trustees:*

The Secretary has the honor to submit herewith a record of the more important transactions of the Board during the biennial period ending June 30, 1908.

### BOARD OF TRUSTEES.

#### Ex Officio.

His Excellency, JAMES N. GILLETT..... Sacramento.  
Governor of California.

Hon. EDWARD HYATT..... Sacramento.  
Superintendent of Public Instruction.

#### APPOINTED TRUSTEES.

F. A. HIHN, Esq..... Santa Cruz.  
Term expires, 1909.

Prof. E. J. WICKSON, A.M..... Berkeley.  
Term expires, 1910.

R. M. SHACKELFORD, Esq..... Paso Robles.  
Term expires, 1911.

PAUL M. GREGG, A.B..... San Luis Obispo.  
Term expires, 1911.

THOS. J. FIELD, Esq..... Monterey.  
Term expires, 1912.

#### OFFICERS OF THE BOARD.

R. M. SHACKELFORD..... President.

PAUL M. GREGG..... Vice-President.

LEROY B. SMITH..... Secretary.

COMMERCIAL BANK OF SAN LUIS OBISPO..... Treasurer.

#### FINANCE COMMITTEE.

Trustees SHACKELFORD, GREGG, and FIELD.

Vacancies in the Board were filled as follows:

R. M. Shackelford, Esq., term expired January, 1907, and reappointed for a term of four years.

George S. Edwards, A.B., term expired January, 1907. Paul M. Gregg, A.B., appointed 1907 for a term of four years.

Hon. Warren M. John, term expired January, 1908. Thomas J. Field, Esq., appointed for a term of four years.

#### FACULTY.

The record of appointments and resignations constitutes the first section of the report of the Director, appearing on page 7.

## CONSTRUCTION OF BUILDINGS.

*Domestic Science Building.*—The following statement shows the use of funds appropriated by special act of 1905 for building and equipment:

Appropriation .....	\$30,000 00
Mason work contract .....	\$3,315 16
Mason work extras .....	240 75
Carpenter and iron work contract.....	14,665 00
Carpenter and iron work extras.....	195 14
Plumbing contract .....	1,616 45
Plumbing extras .....	110 85
Plumbing extras .....	52 75
Plumbing extras .....	10 00
Plumbing extras .....	9 00
Tinning and roofing contract .....	1,700 00
Painting contract .....	1,313 90
Painting extras .....	98 60
Heating and ventilating contract .....	1,590 00
Heating and ventilating extras .....	65 00
Architect's fees .....	1,240 00
Equipment and furniture .....	2,378 79
Miscellaneous claims, construction and equipment .....	1,269 49
	29,870 88

Balance June 30, 1908 .....

\$129 12

Out of the Improvement Fund of \$39,000, act of 1907, there were erected by day labor a forge shop extension, 40 by 44 feet, a machine shop 40 by 100 feet, and a plant propagation house 30 by 42 feet. This work was done between July, 1907, and February, 1908, and was under the supervision of the State Department of Engineering. For a detailed account of the cost of this work see Improvement Fund in the Financial Statement for the year ending June 30, 1908.

*Cottages.*—Bids for construction of two cottages were received and opened at a special meeting held April 15, 1908. Proposals on entire work were as follows:

J. Maino & Son, San Luis Obispo.....	\$3,846 00
Rasmussen & Parsons, San Luis Obispo.....	4,190 00

The contract was awarded to J. Maino and Son.

*Dormitory and a Creamery Building.*—Proposals for the erection of a dormitory and a creamery building were opened April 15, 1908, but all bids were rejected on account of being too high.

June 12, 1908, there was opened a second set of proposals covering construction of these two buildings under somewhat modified specifica-

tions. Bids on entire work of erection of a dormitory and a creamery, in accordance with plans and specifications, were as follows:

Bidder.	Dormitory.	Creamery.
F. O. Engstrum Co., Los Angeles.....	\$20,765 00	\$9,980 00
Lindgren Co., San Francisco.....	27,990 00	10,940 00
Kuck & Smith, San Luis Obispo.....	24,555 00	10,875 00
Healy-Tibbitts Construction Co., San Francisco.....	27,980 00	11,900 00
W. N. Concanon Co., San Francisco.....	26,987 00	11,482 00
J. Maino & Son, San Luis Obispo.....	26,400 00	10,554 00

Healy-Tibbitts offered to do the entire work for \$38,800 if awarded both contracts.

Concanon offered to deduct \$500 from creamery figures if awarded both contracts.

The lowest bids were submitted by the F. O. Engstrum Company of Los Angeles, and they were awarded both contracts.

The bids received on parts of erection of buildings appear in the regular minutes of the Board.

## FINANCIAL STATEMENT.

FOR YEAR ENDING JUNE 30, 1907.

*Salaries.*

Appropriation for year .....	\$20,500 00
Balance July 1, 1906 .....	787 24
	_____ \$21,287 24
Leroy Anderson, Director .....	\$2,400 00
S. S. Twombly, Instructor in Agriculture, Chemistry and Veterinary Science .....	1,800 00
Leroy B. Smith, Instructor in English, History and Economics .....	1,500 00
E. W. Yount, Instructor in Carpentry and Drawing (10 months) .....	1,250 00
O. L. Heald, Instructor in Carpentry and Drawing ( $\frac{1}{4}$ month) .....	81 00
H. B. Waters, Instructor in Physics and Electricity .....	1,500 00
J. E. Roadhouse, Instructor in Plant Industry and Irrigation .....	1,500 00
W. F. Ewing, Instructor in Mathematics .....	1,250 00
Harriet Howell, Instructor in Domestic Art .....	1,200 00
May Secretst, Instructor in Domestic Science .....	1,200 00
C. W. Rubel, Instructor in Animal and Dairy Husbandry .....	1,099 92
L. E. Pearson, Instructor in Freehand Drawing, Sloyd and Forging .....	1,020 00
C. M. Gassaway, Instructor in Mechanical Drawing .....	900 00
Naomi M. Lake, Clerk and Librarian .....	900 00
Edith Richardson, Director's secretary, and Manager of Dormitory (10 months) .....	550 00
S. C. Griffith, Farm Foreman .....	780 00
A. D. Sinclair, Gardener .....	840 00
A. G. Lunn, Poultryman (2 months) .....	120 00
Dairyman .....	670 00
Teamsters .....	707 90
	_____ 21,268 82
Balance June 30, 1907 .....	\$18 42

*Support.*

Appropriation for year .....	\$11,150 00
Balance July 1, 1906 .....	862 20
	_____ \$12,012 20
Agriculture and chemistry .....	\$50 83
Animal husbandry .....	454 17
Botany and horticulture .....	524 49
Carpenter shop .....	184 16
Chemical laboratory .....	130 60
Creamery .....	166 71
Drawing, freehand .....	25 67
Drawing, mechanical .....	19 05
English, history and economics .....	44 40
Farm .....	893 50
Fencing and farm improvement .....	427 88
Forge shop equipment .....	76 27
Irrigation and surveying .....	576 85
Janitors and other assistants .....	1,219 80
Mathematics .....	6 00
Office expenses and stenographer .....	1,057 65
Physics .....	690 47

Poultry fencing and houses .....	\$314 44
Poultry attendant .....	484 50
Power, heat and light .....	1,006 42
Publicity .....	137 75
Purchase of horse .....	150 00
Repairs .....	559 42
School furniture .....	722 53
Support of horse .....	80 69
Stock (animals) .....	1,563 61
Tools and machinery .....	442 19
	—————
	\$12,010 05

Balance June 30, 1907 .....	\$2 15
	—————

*Grounds.*

Appropriation .....	\$2,500 00
Balance June 30, 1906 .....	40 70
	—————
	\$2,540 70
Labor .....	\$1,160 65
Planting .....	231 05
Reservoir .....	127 00
Road building and repairs .....	744 81
Water pumping .....	109 31
Water piping, hose, etc. ....	157 11
	—————
	2,529 93
Balance June 30, 1907 .....	\$10 77
	—————

*Library.*

Appropriation .....	\$500 00
Balance July 1, 1906 .....	19 95
	—————
	\$519 95
Books .....	\$450 00
Periodicals .....	43 14
Freight and express .....	4 51
Book slips and envelopes .....	10 50
	—————
	508 15
Balance June 30, 1907 .....	\$11 80
	—————

*Trustees' Expenses.*

Appropriation .....	\$400 00
Balance July 1, 1906 .....	185 65
	—————
	\$585 65
Traveling, hotel and meals .....	\$108 66
Livery .....	118 50
Supplies .....	28 92
Labor .....	8 50
Pavilion rent .....	25 00
	—————
	289 58
Balance June 30, 1907 .....	\$296 07
	—————

*Printing.*

Appropriation .....	\$400 00
Balance on hand July 1, 1906 .....	96 75
Additional amount allowed .....	200 00
	—————
	\$696 75
Disbursements .....	696 75

## REPORT OF BOARD OF TRUSTEES OF THE

## PERMANENT IMPROVEMENTS.

*Domestic Science Building.* (Special appropriation, act of 1905.)

Appropriation .....	\$30,000 00
Mason work, contract .....	3,315 16
Mason work, extras .....	240 75
Carpenter and iron work, contract .....	14,665 00
Carpenter and iron work, extras .....	195 14
Plumbing, contract .....	1,616 45
Plumbing, extras .....	120 85
Tinning and roofing, contract .....	978 75
Painting, contract .....	886 88
Painting, extras .....	98 60
Heating and ventilating, contract .....	1,590 00
Heating and ventilating, extras .....	65 00
Architect's fees .....	1,240 00
Equipment and furniture .....	1,569 23
Miscellaneous claims, construction and equipment .....	1,012 37
	27,594 18

Balance June 30, 1907 .....	\$2,405 82
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*1905 Improvement Fund.* (Special appropriation, act of 1905.)

Balance July 1, 1906 .....	\$2,314 67
Balance of \$15,000 released by Governor Pardee, November, 1906 .....	4,000 00
	\$6,314 67
Balance paid on bull and calf barn .....	\$187 60
Bridges .....	259 11
Balance paid on carpenter shop equipment .....	113 55
Balance paid on electrical equipment .....	773 57
Feed barn .....	415 70
Balance paid on forge shop equipment .....	47 95
Green house .....	1,035 60
Green house heating .....	831 17
Harness room, horse stalls and tool shed .....	251 53
Hay shed .....	217 78
Horse shed .....	462 25
Manure shed and tool shed .....	200 12
Swine houses .....	107 34
	4,903 27

Balance June 30, 1907 .....	\$1,411 40
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## CONTINGENT FUND.

*Dormitory.*

Balance July 1, 1906 .....	\$204 16
Receipts—Student and faculty, board and room .....	4,397 30
	\$4,601 46
Disbursements—Supplies .....	\$3,161 68
Supplies from other school departments .....	533 72
Service .....	936 65
	4,632 05
Deficit June 30, 1907 .....	\$30 59

*Laboratory.*

Balance July 1, 1906 .....	\$165 13
Receipts—Student fees .....	1,254 00
Income from other sources .....	74 75
	_____
Disbursements—Laboratory supplies .....	\$1,493 88
	1,367 27
Balance June 30, 1907 .....	_____
	\$126 61

*Dairy.*

Balance July 1, 1906 .....	\$40 14
Receipts—Sale of milk, butter and stock .....	986 70
Sale of milk, butter and stock to other school departments .....	487 06
	_____
Disbursements—Labor and supplies .....	\$1,513 90
	999 28
Balance June 30, 1907 .....	_____
	\$514 62

*Poultry.*

Balance July 1, 1906 .....	\$11 94
Receipts—Sale of products .....	45 78
Sale of products to other school departments .....	130 97
	_____
Disbursements—Labor and supplies .....	\$188 69
	339 84
Deficit June 30, 1907 .....	_____
	\$151 15

*Power House.*

Balance July 1, 1906 .....	\$1 65
Receipts .....	14 50
	_____
Disbursements .....	\$16 15
	6 59

Balance June 30, 1907 .....

\$9 56

## FINANCIAL STATEMENT.

FOR THE YEAR ENDING JUNE 30, 1908.

## Salaries.

Appropriation for year .....	\$26,000 00
Leroy Anderson, Director ( $\frac{1}{2}$ year) .....	\$1,350 00
Le Roy B. Smith, Director ( $\frac{1}{2}$ year) and Instructor .....	2,025 00
H. B. Waters, Vice-Director and Instructor .....	1,624 99
F. E. Edwards, General and Agricultural Chemistry .....	1,600 00
J. E. Roadhouse, Instructor in Plant Industry and Irrigation (2 months) .....	250 00
I. J. Condit, Instructor in Botany and Horticulture (10 months) .....	1,000 00
W. F. Ewing, Instructor in Mathematics .....	1,500 00
May Secrest, Instructor in Domestic Science .....	1,500 00
C. W. Rubel, Instructor in Animal and Dairy Husbandry .....	1,320 00
O. L. Heald, Instructor in Carpentry and Architectural Drawing (9 $\frac{1}{2}$ months) .....	1,045 00
F. L. Tavenner, Instructor in Mechanical Drawing and Ma- chine Shop Practice .....	1,200 00
E. J. Berringer, English, History and Economics (6 months)	600 00
L. E. Pearson, Instructor in Freehand Drawing, Sloyd and Forging .....	1,140 00
Ethel Bancroft Richardson, Instructor in English (4 months)	340 00
Margaret Chase, Instructor in English (6 months) .....	510 00
Grace Fordyce, Instructor in Domestic Art (9 months) .....	900 00
Edith Richardson, Director's secretary and librarian .....	900 00
Jane Vaughn Gillett, Bookkeeper and Manager of Dormitory (11 months) .....	825 00
Naomi M. Lake, Clerk and Librarian (1 $\frac{1}{3}$ months) .....	100 00
A. D. Sinclair, Gardener .....	900 00
A. G. Lunn, Poultryman .....	900 00
S. C. Griffith, Farm Foreman .....	840 00
J. M. Duffy, Dairyman .....	720 00
Teamsters .....	1,281 50
Gardener's assistant .....	620 00
Engineers .....	579 00
	25,570 49
Balance June 30, 1908 .....	\$429 51

## Support.

Appropriation .....	\$12,500 00
Animal husbandry .....	\$519 71
Botany and horticulture .....	187 68
Agricultural experiments .....	169 78
Carpenter shops and sloyd .....	180 00
Chemical laboratory .....	386 36
Creamery .....	67 95
Domestic science .....	36 19
Drawing, freehand .....	23 19
Drawing, mechanical .....	102 35
Farm .....	1,394 79
Fencing .....	127 45
Freight and express .....	81 42
Janitors .....	2,008 45

Lath house .....	\$77 04
Mathematics .....	28 34
Office .....	1,146 02
Office furniture, including safe .....	279 67
Poultry equipment .....	299 06
Poultry stock .....	89 45
Poultry, finishing incubator cellar .....	100 13
Power, heat and light .....	933 69
Repairs .....	1,069 77
Reserve (fighting fire) .....	106 35
School furniture .....	589 06
School supplies .....	133 87
Stock .....	164 75
Stock propagation .....	89 50
Surveying .....	118 72
Tools, machinery and harness .....	243 53
Underground pipes relaid .....	308 05
	-----
	\$11,080 32

Balance June 30, 1908 .....

\$1,419 68

*Grounds.*

Appropriation .....	\$3,000 00
Labor .....	\$590 50
Planting .....	325 62
Play grounds .....	370 10
Pumping water .....	163 61
Road building and repairing .....	1,259 65
Water piping, hose, etc.....	192 60
	-----
	2,902 08

Balance June 30, 1908 .....

\$97 92

*Library.*

Appropriation .....	\$500 00
Books .....	\$339 05
Periodicals .....	65 00
Freight and express .....	4 95
Supplies .....	10 80
Library cards .....	18 60
Librarian's expenses at State Library Association .....	20 75
	-----
	459 15

Balance June 30, 1908 .....

\$40 85

*Trustees' Expenses.*

Appropriation .....	\$400 00
Traveling, hotel and meals .....	\$270 10
Livery .....	49 75

319 85

Balance June 30, 1908 .....

\$80 15

*Printing.*

Appropriation .....	\$375 00
Printing July 1, 1907, to June 30, 1908, inclusive .....	369 50

Balance June 30, 1908 .....

\$5 50

## PERMANENT IMPROVEMENTS.

*Land and Water Supply.* (Special appropriation, act of 1907.)

Appropriation .....	\$15,000 00
Disbursement, 30 acres of land and water supply .....	15,000 00

*Dormitory.* (Special appropriation, act of 1907.)

Appropriation .....	\$25,000 00
State Architect's fees .....	\$797 40
Typewriting copies of specifications .....	28 10
Advertising for bids .....	46 50
Cement .....	196 85
Labor .....	4 00

1,072 85

Balance June 30, 1908 .....

\$23,927 15

*Improvement Fund.* (Special appropriation, act of 1907.)

Appropriation .....	\$39,000 00
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Cottages, apportionment .....

\$5,000 00

*Disbursements—*

State Architect's fees .....	\$207 58
Advertising for bids .....	15 00
Freight on cement .....	28 50
Labor .....	2 90

253 98

Balance June 30, 1908 .....

\$4,746 02

Creamery apportionment .....

\$12,000 00

*Disbursements—*

State Architect's fees .....	\$533 32
Typewriting copies of specifications .....	25 30
Advertising for bids .....	26 50
Freight on cement .....	104 08
Express .....	30

689 50

Balance June 30, 1908 .....

11,310 50

Propagation House, apportionment .....

\$2,000 00

*Disbursements—*

State Architect's fees .....	\$57 83
Cement .....	52 07
Freight .....	60 30
Plumbing .....	200 00
Materials .....	771 91
Labor .....	663 20

1,805 31

Balance June 30, 1908 .....

194 69

\$16,251 21

Shops, apportionment ..... \$20,000 00

*Disbursements*—

Machine, construction, State Architect's fees	.....	\$107 39
Materials and labor	.....	5,589 26
Equipment	.....	7,294 37
Forge, construction	.....	1,527 86
Forge, equipment	.....	1,401 92
Carpenter, equipment	.....	2,074 63
Electrical, equipment	.....	714 72
Power house, equipment	.....	489 19
Engine	.....	1,014 44
	.....	20,213 78

Over expenditure	.....	\$213 78
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Balance June 30, 1908	.....	\$16,037 43
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*Domestic Science Building. 1907-08.*

Balance July 1, 1907	.....	\$2,405 82
Tinning and roofing contract	.....	717 75
Painting contract, final payment	.....	427 02
Plumbing, extra	.....	61 75
Equipment and furnishings	.....	809 56
Miscellaneous claims	.....	260 62
	.....	2,276 70

Balance June 30, 1908	.....	\$129 12
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*1905 Improvement Fund.*

Balance July 1, 1907	.....	\$1,411 40
Balance paid on bull and calf barn	.....	3 13
Balance paid on feed barn	.....	46 30
Balance paid on green house	.....	3 12
Balance paid on harness rooms and stalls	.....	12 80
Balance paid on hay shed	.....	304 00
Balance paid on horse shed (students)	.....	342 10
Incubator cellar	.....	699 95
	.....	1,411 40

**CONTINGENT FUNDS. 1907-8.**

*Dormitory.*

Deficit July 1, 1907	.....	\$30 59
<i>Receipts</i> —Student and faculty, room and board	.....	\$4,919 41
<i>Disbursements</i> —Supplies	.....	3,122 54
Supplies from other school departments	.....	631 06
Service	.....	1,109 22
	.....	4,893 41
Balance June 30, 1908	.....	\$26 00

	<i>Laboratory.</i>
Balance July 1, 1907 .....	\$126 61
Receipts—Student fees .....	1,451 00
Income from other sources .....	384 97
Disbursements—Laboratory supplies .....	\$1,775 66
Balance June 30, 1908 .....	\$186 92
	<i>Dairy and Farm.</i>
Dairy balance July 1, 1907 .....	\$514 62
Farm deficit carried from July 1, 1906 .....	68 13
Actual balance July 1, 1907 .....	\$514 62
Receipts—Sale of milk, butter and stock .....	816 95
Sale of milk, butter and stock to other school departments .....	633 68
Miscellaneous farm receipts for year ending June 30, 1908 .....	37 00
Disbursements—Labor and supplies .....	\$1,934 12
Balance June 30, 1908 .....	1,780 15
	<i>Poultry.</i>
Deficit July 1, 1907 .....	\$151 15
Receipts—Sale of products .....	\$186 49
Sale of products to other school departments .....	157 11
Disbursements—Labor and supplies .....	\$343 60
Deficit June 30, 1908 .....	479 31
	<i>Power House.</i>
Balance July 1, 1907 .....	\$9 56
Receipts .....	30 50
Disbursements .....	\$40 06
Balance June 30, 1908 .....	28 30
	\$11 76