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ANNUAL REPORT TO THE STATE BOARD OF EDUCATION
ON THE
PROGRESS OF THE CALIFORNIA POLYTECHNIC SCHOOL
SAN LUIS OBISPO, CALIFORNIA

JANUARY, 1939

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POLYTECHNIC SCHOOL, SAN LUIS OBISPO, CALIFORNIA - JANUARY, 1939

FOREWORD: This is the fifth annual report of this type. For the convenience of comparison, the same general index headings are being maintained in this report, as were used in the four previous annual summaries. It is difficult to picture the progress of an institution except in statistical terms, unless one follows the physical improvements and notes the continually finer type of undergraduate and graduate. It is hoped that this report will bring to the members of the State Board of Education, and others to whom it is made available, a picture of those tangible factors possible of measurement.

I. HISTORY

The detailed history of the California Polytechnic School has been made available to members of the Board in previous reports, and in their official visit to the campus. Thus, only a few significant dates and changes will be mentioned.

First, it is well to recall that the California Polytechnic School was established in 1901--at the turn of the century, and years prior to the general acceptance of popular technical and vocational training.

Second, it is important to remember that the nation made rapid strides in the level of popular education between 1903, when classes were started at the San Luis Obispo institution, and 1933. The California Polytechnic School was in advance of its time in 1903, and behind its time in 1933 because the level of employment demand had advanced from high school to college.

California Polytechnic School could well have been advanced from high school to college level immediately after the war period, or about when the introduction of more and more machinery began to raise the age level for employment from 15 or 16 years to 20 and 21 years.

In 1933 this fact was recognized, and since that time the California Polytechnic School has become a technical college, on the same level of instruction as the conventional agricultural and mechanics arts colleges

in operation over the nation as a whole. The name "California Polytechnic School" is somewhat misleading, creating the impression of a state polytechnic high school of elementary nature; a more fitting name might be California State College of Agriculture and Industry, or some other terminology indicating that this is a technical college.

The steady growth of enrollment is indicative of the popular acceptance of technical training on a college level. The continued employment of Polytechnic graduates in 1938 in the face of industrial and agricultural recession, is proof that this popularity is not misdirected.

This growth has been effected during the period of constant raising of standards in instruction and entrance requirements. Higher standards have been constantly necessary because of employment demands as well as the limited facilities of the institution, making it necessary to reserve its type of education to those most capable of benefitting by it. At present, about 97 per cent of the entering freshmen are high school graduates, and all except the vocational curricula are closed to those with less than high school graduation. An increasing number of enrollees are junior college or regular college transfers who seek the type of instruction leading directly to technical employment.

Significant steps since 1933 have been acceptance of the work at California Polytechnic for college transfer by all major colleges, and the delegation by the State Board of Education in 1937, of the administration of the school to the State Bureau of Agricultural Education, a unit of the State Department of Education.

Probable development of California Polytechnic in the next few years will be in the direction of adding new occupational fields. One such course -- in Petroleum Industries -- was added at the beginning of this year. The type of training given in a technical college is most effective in small departments of 40 to 80 students in a major field. The department head may come to personally

know all of his students, counsel with them, and recommend those most qualified for employment. The number graduating each year may reasonably be employed without apprenticeship in the field for which they have been trained. Due to increased number of students, it is necessary to counsel with those who wish to enroll in the "popular" departments of meat animal husbandry, air conditioning, and aeronautics, to determine whether their aptitudes and abilities may not lie in other directions. In aeronautics it was necessary to close all enrollment two weeks before school opened in September, 1938.

II. THE VOORHIS UNIT

Of principal significance in the report of the California Polytechnic School for the current fiscal year, was the addition of the Voorhis Unit at San Dimas.

The Voorhis School was established about 1928 by C. B. Voorhis, a Pasadena philanthropist, as a private eleemosynary institution. He operated it until 1938 as a school and home for boys who did not have other opportunities for an inspiring home life or an education. Then he decided to give up the tremendous task, and ultimately selected California Polytechnic as the institution which would most completely carry on, on a college level, the opportunity for practical education and good influence, that he had established for boys of younger age.

Mr. Voorhis turned over as an outright gift the \$1,500,000 institution, including four dormitories, complete classroom and laboratory facilities, 30 acres of citrus and other orchard, and all other accommodations, to be operated perpetually as a unit of California Polytechnic. Within a week after the gift was accepted by the State Department of Education in September, all of the agricultural inspection work, and citrus and deciduous fruit majors, had been transferred to the San Dimas branch from San Luis Obispo. The college year opened with an enrollment of about 80 young men, with five faculty members. Maximum scope of the San Dimas branch without considerable construction, is from 125 to 150 men. At present, it is planned to utilize it only for the horticulture work.

The gift came at a most opportune time, for this field at San Luis Obispo was expanding rapidly without proper climate, soil, water or laboratory set-up in the way of trees, groves or vines. The gift is to be perpetuated in retaining the name as the Voorhis Unit of California Polytechnic.

III. THE WRASSE LOAN FUND

During the same year as the Voorhis Unit gift came the first substantial cash endowment to aid worthy students.

Leopold Edward Wrasse, elderly San Joaquin Valley rancher and capitalist, gave the school \$25,000 to be invested in securities, with the proceeds to become available to worthy students as loans to assist them in completing their education.

Students coming from Fresno County will receive first opportunity to borrow from the Wrasse Fund, but there is no fixed geographical limitation beyond this point. Students will be required to show need, and to show ability to work and save money.

Following receipt of the Wrasse endowment, the president of California Polytechnic was advised that another philanthropist has provided for a cash endowment of \$50,000 in his will. Since the money will not become available until his death, and until the probate of the estate, his legacy is not being publicized at the present time.

IV. THE BUDGET

The budget items for the current fiscal year are shown below with comparisons in the major brackets between this and the previous year:

	<u>89th Fiscal Year</u>		<u>90th Fiscal Year</u>	
	<u>Amounts</u>	<u>Percentages</u>	<u>Amounts</u>	<u>Percentages</u>
Salaries & Wages	\$117,653.38	70	\$145,566.25	73
Mat. & Supplies	23,613.00	14	28,970.00	15
Service & Expense	13,155.00	8	13,720.00	7
Prop. & Equipment	<u>12,810.00</u>	<u>8</u>	<u>9,965.00</u>	<u>5</u>
	\$167,231.38	100	\$198,221.25	100

The above increase of \$27,912.87 in salaries and wages comes from a combination of conditions. Primary cause was setting up five new positions made necessary by the tremendous increase in teaching work, resulting from an increase of about 25 per cent in enrollment, and the opening of the Voorhis Unit. The new positions were:

Three Instructors in Agriculture

One Instructor in Industrial Subjects

One Instructor in Related Subjects

In addition, instructors and civil service employees received a raise to the next range of their salary schedules.

Although increases in the budget as explained above do not entirely represent actual current increases in expenditures for educational purposes, using the total figures we find the following:

Per pupil cost 89th fiscal year (January 20, 1938)	
(\$167,231.38 divided by 480 students).....	\$327.00
Per pupil cost 90th fiscal year (January 1, 1939)	
(\$198,221.25 divided by 675 students).....	\$293.66

From this it is evident that the per pupil cost for all purposes is being materially reduced, and that the additional expense necessitated by the increased enrollment is considerably less in proportion than the increased teaching load.

Using the enrollment as of January 3, 1939, as a basis; and determining the "equivalent full-time registration" by allowing one unit of registration for each 15 units of instruction for which students are registered, as done by the state colleges, we find the following:

Pupil cost per equivalent full-time registration,
90th fiscal year (\$198,221.25 divided by 815)..... \$243.21

In considering costs, whether figured on a basis of actual number of different students enrolled, or on the basis of equivalent full-time registration by counting one unit for each 15 for which the men are registered, it must be remembered that the very nature of courses in the state technical and vocational college are based on a high degree of individual instruction.

All instruction must be personal and intensive, and the same men responsible for class instruction are likewise responsible for the project operation, which requires almost an equal amount of time. Faculty hours are limited only by the work to be done, and in the livestock and poultry divisions, it is not unusual for the instructor to work from six or seven in the morning until ten or eleven o'clock at night in the combination of class work, demonstration, project supervision and finally, managerial responsibility for college-owned foundation herds and flocks.

Thus it is evident that the comparable figure of \$293.00 per full-time equivalent registration is extremely low compared even with many academic colleges where mass education is possible, and where lecturers have opportunity to address classes of several hundred in such general fields as English, economics, political science, history and mathematics.

V. ENROLLMENT

Student enrollment is not always a gauge of the educational efficiency of an institution. Popularity as revealed in number of undergraduates registered may be due to favorable economic conditions, a winning football team, or an easy method of making up college entrance requirements.

The growth in enrollment at California Polytechnic School which has been steady and even spectacular since the reorganization of the institution in 1933, apparently cannot be attributed to any of these causes except possibly favorable economic conditions; especially not to its "make-up" work, for the level of instruction and requirements for enrollment have been consistently raised in order to offer crowded facilities to those most likely to profit by them; and no college preparatory "make-up" work is offered.

During the last calendar year, the rate of growth and the actual number of new students, was the greatest in the four-year period. The increase has been 195 students over the previous year.

Further study of the enrollment by counties shows that California Polytechnic serves students from 46 of the state's 58 counties -- a spread equaled only by the University of California. Thirty-six counties sent more students to California Polytechnic during the current year, while four sent an equal number.

COMPARATIVE SUMMARY OF REGISTRATION, CALIFORNIA POLYTECHNIC SCHOOL, SAN LUIS OBISPO

<u>County</u>	<u>January 20, 1938</u>	<u>January 3, 1939</u>	<u>Loss or Gain</u>
Alameda	12	12	=
Amador	0	1	+
Butte	2	4	+
Colusa	7	7	=
Contra Costa	4	3	-
El Dorado	1	0	-
Fresno	27	29	+
Glenn	4	8	+
Humboldt	9	7	-
Imperial	7	8	+
Inyo	2	2	=
Kern	4	9	+
Kings	4	7	+
Lake	1	1	=
Lassen	1	0	-
Los Angeles	83	157	+
Madera	4	5	+
Marin	2	3	+
Mendocino	3	3	=
Merced	13	17	+
Modoc	2	3	+
Monterey	7	9	+
Napa	6	5	-
Nevada	1	0	-
Orange	19	30	+
Placer	2	0	-
Riverside	5	16	+
Sacramento	3	4	+
San Benito	1	1	=
San Bernardino	10	21	+
San Diego	30	33	+
San Francisco	3	4	+
San Joaquin	6	14	+
San Luis Obispo	52	70	+
San Mateo	0	1	+
Santa Barbara	28	24	-
Santa Clara	14	16	+
Santa Cruz	5	9	+
Siskiyou	1	5	+
Shasta	3	1	-
Solano	9	6	-
Sonoma	15	18	+
Stanislaus	15	22	+
Sutter	1	3	+
Tehama	4	9	+
Tuolumne	1	3	+
Tulare	16	18	+
Ventura	6	12	+
Yolo	8	9	+
Yuba	1	2	+
Other States and Countries	<u>16</u>	<u>24</u>	+
	480	675	

The above table represents the total number of different students registered. It is interesting to note the result when registration is compiled on the basis used by the State colleges for determining equivalent full-time enrollment.

The figure used by the state colleges is to count one full-time student for each 15 units of registration. On this basis, we find the California Polytechnic School enrollment would be 815 students. The study on this basis shows that the average unit load of students in the agricultural curricula is $17\frac{1}{2}$ and those in the industrial division 19 units. The table follows:

	<u>Actual Enrollment</u>	<u>Average Units</u>	<u>Equivalent on 15-Unit Basis</u>
Agriculture	393	$17\frac{1}{2}$	458.5
Industry	<u>282</u>	<u>19</u>	<u>357.2</u>
Total	675		815.7

Difference in the average number of units between the agricultural and the industrial curricula is found in two conditions. First, agriculture students spend considerable laboratory time in the conduct of their own projects. Only one unit of credit is given for this laboratory time, since the projects are in the main those of commercial type which return the student an actual profit; therefore, only credit is given for that time involved in the actual laboratory exercises of record-keeping, and project seminar.

Industrial unit registration average is kept at a high level through requirements in the aeronautics division, where students must fulfill pupil-hour requirements of the United States Department of Commerce for license examinations, as well as cover a great amount of ground in technical courses and laboratory practice. On the basis of agricultural student project work, the agricultural students put in an equal number of hours, some longer hours, but receive less formal credit.

VI. BUILDING PROGRAM

There has been considerable expansion in the building program during the last year. The five farm units have been completed and are in use at the present time. They are:

The hog unit, with a central farrowing house and a number of colony houses, where students may carry on their project work under the most favorable conditions.

The student beef project feeding barn replacing the Old County Fair Livestock Buildings, which have been in use a number of years and were not at all suitable for this purpose. This new beef unit is a great help to the students who are carrying on project work in that line.

Three dairy units now being utilized to the fullest extent--the feed barn for the dairy cattle, the calf barn, and the new bull barn to replace an old building put up a number of years ago. The old bull barn has been renovated and is being used at the present time as a veterinary hospital unit. It has several isolation wards so that sick animals may not only receive proper treatment, but be isolated from the rest of the herd as well.

Two new classroom units of 14,400 feet of floor space have also been completed during the past year. These units take the place of Anderson Hall and the "Annex", which were condemned for classroom use during the past year. The new units house the music, science, landscaping, air conditioning, biological sciences, and the dairy departments, as well as affording ample space for a new library and four modern classrooms. They provide facilities which have been needed on the campus for some time.

Another structure which has been needed for some time is the new storage building which has just been completed. It is being utilized as a receiving depot, carpenter and general repair shop, as well as for the storage of miscellaneous equipment and material for institutional purposes.

Bleachers were built on the football field, and the field has been equipped with lights so it is possible to play games at night.

At the present time six dormitory cottages are under construction. When completed in February, they will permit the housing of 72 additional students on the campus. The housing problem has been increasingly serious, because it was necessary for 200 students to stay off the campus in private homes. A number of them are not able to find accommodations suitable for their particular purpose, and an estimated 50 prospective freshmen did not enroll in the fall of 1938 because of lack of housing facilities. When these new buildings are completed, it will help materially in reducing the emergency.

The natatorium which was nearly completed at the time of the last annual report has been put into use. It fills a long-felt need on the part of the students in creating more activities on the campus as a part of their social life.

In addition to the above, a number of additions and betterments activities have been carried on during the past year. All of the new buildings are being landscaped at the present time to conform with the landscaping plan as found on the rest of the campus. A number of trees and shrubs have been planted and several new lawns are being put in.

A new pump has been installed for the campus water supply so that it is possible to pump a greater supply to the tank in order to take care of the increased demand for water both in the buildings and for lawns.

VII. PROJECT OPERATION

Operations of the various student individual and group projects is one of the most important single functions of the California Polytechnic School, since this work is the basis of all instruction. Self-owned projects are combined with managerial projects to give students a combination of manipulative skills and scientific background unequalled in any other public institution in the country.

Projects are classified as follows:

Livestock:

- a. Student-owned projects in market livestock.
- b. Student-owned projects in dairy cattle.
- c. Student-operated projects in dairy cattle.

Poultry:

- a. Student-owned laying projects (off the campus).
- b. Student-operated project of school laying flock.
- c. Student-owned brooding projects on campus.
- d. Student-operated turkey fattening project.

Crops:

- a. Student-operated crops projects on campus.

Fruit:

- a. Student-operated project of all school-owned and leased orchards and vineyards.

Industrial:

- a. Student-owned projects in aeronautics repair.
- b. Student-operated projects in aeronautics repair.
- c. Student-operated projects in electrical installation.
- d. Student-operated projects in power plant operation.
- e. Student-operated projects in air-conditioning installation.

The following represents some of the statistics in project operation:

AGRICULTURAL PROJECTS

- Market Livestock -

Report on market livestock owned, fed out, and sold by 121 students in Meat Animals Department in 1938:

Beef cattle	145
Sheep	84
Swine	439
Market value of animals sold	\$22,987.00
Student project expenses	\$18,615.00
Profit to project owners	\$3,372.00

Fifty-eight boys fed out beef cattle, fifty-one had swine projects, and twelve had sheep projects. Feed prices were lower in 1938 than in 1937. Livestock prices were higher in comparison to feed prices than in 1937, although feeder cattle and hog prices were higher in 1938. Projects in meat animals returned a reasonable amount of profit.

Meat animals students exhibited at various livestock shows, winning a total of \$1951.00 in premium money, as shown by the following table:

Year	Show	Gr. Champ.	Champ.	1st	2nd	3rd	4th	5th
1938	Interstate	-	4	9	8	7	4	4
1938	State Fair	-	-	1	5	5	3	5
1938	L. A. County Fair	1	1	9	6	2	-	-
1938	Great Western	1	3	12	9	6	3	1
		2	8	31	28	20	10	10

High point of the year was winning the Grand Champion carload of Fat Steers at the 1938 Great Western Livestock Show in competition with livestock breeders over the state. Also, grand champion pen of lambs was won at the L. A. County Fair. The students exhibited in the open classes in competition with adult breeders in all shows except the Interstate Junior Show where they showed in the advanced division against Junior College and high school graduates in continuation classes. They showed both champion Angus and champion Shorthorn steers at the Great Western Show last fall.

- Dairy Cattle -

The entire dairy unit is leased from the state and operated as a student project. Students are assigned individual animals and are given the responsibility of feeding, milking and otherwise caring for them on a share basis. All the other work about the dairy unit is also almost entirely done by students either for instruction or pay.

Students actually own thirty-seven animals of good dairy breeding that they keep on the school farm on a share basis with the dairy department. The school furnishes equipment and quarters in which to keep these animals and sells feed to the students for this stock. The school receives a share of the returns to cover costs of maintaining these project animals.

Average number of purebred, registered animals in school	project herd	100
Average number in student-owned projects		37
Monthly net return to students on dairy projects		\$200.00
Average monthly student dairy project payroll		\$400.00
Average butterfat production per cow for entire herd		393 lbs.
Average commercial butterfat production per cow for entire state		250 lbs.

The average butterfat production of 393 lbs. for all the dairy cows on the school farm was the highest in the county. One cow owned by the school produced 711 pounds of butterfat, while being fed and cared for by students. Guernsey cows in the school herd now hold every state record in the Herd Improvement division for that breed.

During the past three or four years the school dairy unit has paid all operating costs and has shown a small profit while serving a very valuable educational purpose.

Several of the dairy students who have purchased and raised stock of their own are now making plans to use these animals for foundations for herds that they will establish after completing their school work.

- Poultry -

Laying projects	20
Brooding projects (Leghorn)	15
Brooding projects (meat birds)	4
Brooding projects (turkeys)	2
Average number of laying hens	1960
Turkeys raised and sold Thanksgiving and Christmas	235
Turkey breeders on hand	25
Breeding cockerels sold to Future Farmers and poultrymen	170
Hatching eggs and chicks sold to Future Farmers	\$1800.00
Student incomes from project earnings	\$1150.00
Hatching eggs sold during the year	52,000

Eleven hens made trapnest egg records of over 290 eggs during the year. High hen for the year was 326 eggs. Three hens have a cumulative egg record of more than 1000 eggs. Twenty-two hundred individually pedigreed chicks were hatched and brooded. More than 5000 chicks brooded during the year. Seven hundred eighty pedigreed pullets are in the trapnests.

- Fruits Projects -

At the beginning of the school year, the Agricultural Inspection Department was moved to the Voorhis Unit at San Dimas, and with it went the Fruit and Crops Department. As a result, the 10 acres that were leased by the project fund in 1937 were not operated after September, 1938.

At the present time, the following units on the San Luis Obispo campus are being cared for and maintained by the students:

12 $\frac{1}{2}$ acres deciduous fruits

- 1 acre grapes, planted in cooperation with the
viticulture department of U. C.
- 2 acres of young citrus

The courses now given in fruit are practical units for those desiring to get a rounded farm training.

At San Dimas, the following facilities are available for supervised practice and student labor:

25 acres of citrus, principally oranges

5 acres of avocados

3 acres of deciduous fruits, including walnuts

1 $\frac{1}{2}$ acres of grapes

- Crops Projects -

Since the crop work was moved to the Voorhis Unit at San Dimas, projects started during the summer were completed by the students and no further projects were undertaken. These completed projects were:

1 acre sweet corn

1 acre string beans

1 acre miscellaneous vegetables

- Landscape Projects -

Number of students participating in projects	30
Average monthly earnings per student	\$10.00
Number of ornamental trees planted on campus	600
Number of ornamental shrubs planted on campus	1500
Number of ornamental trees and shrubs propagated in school nursery	3000
Number of flats of ornamental annuals grown and planted on campus	900
Number of acres of turf seeded	$3\frac{1}{2}$
Ornamental pot plants for glass house and lath house display	1200

In addition to this nursery practice work, 1500 seedling trees were budded and grafted.

Major projects in landscape work were the drawing of plans for the new class room buildings, the new cottage dormitories, the hog unit, the beef unit, the dairy unit and the planning and planting of many small areas on the campus. Plans were laid out and the work consummated on new lawns, plantings and curbs on 400 feet of the main road between the dormitories, thus ending a project of several years duration on landscaping the roadway from the south entrance of the school to the main buildings.

INDUSTRIAL PROJECTS

--Aeronautics Projects--

Projects for aeronautics students consist of rebuilding airplanes, either changing over obsolete models to modern types, or repairing wrecked ships. Often the latter job involves almost complete construction, building entire fuselages, fabricating and covering wings, mounting engines, overhauling engines, etc. Following are some of the statistics:

Number of planes completed after major overhaul	1
Number in shop, during year, partly completed.....	8
Value of work done on completed ships	\$350
Number of planes to be completed this school year.....	2
Commercial engines overhauled.....	3

--Air Conditioning Projects--

This is a comparatively new department at California Polytechnic, and project work included that done by students for their own homes or for re-sale, and campus installations. Every student worked on one type of project or the other. The following statistics give the picture:

Number of complete refrigerating units rebuilt.....	6
Plans for home air conditioning drawn.....	1
Modernizing heating system in campus buildings, (value \$400.00)...	1
Campus refrigeration service to present installations, (value \$100.00)	
Campus heating and ventilating units installed, (value \$400.00)...	3
Revamping refrigerating system, (value \$200.00).....	1

--Electric Industries Projects--

Principal project work for students in the electrical industries work consists of making repairs and installation to the extensive electrical equipment on the campus, and operation of the college power plant. Much commercial work which could be obtained is not handled because of ethics.

The following are some project statistics:

Campus repair and extension jobs done.....	52
Estimated value of services.....	\$700
Kilowatt hours of power generated in 1938 by student-operated campus plant.....	299,870
(A 11% increase over last year)	
Cost of power from campus plant per kw. hour.....	1 $\frac{1}{4}$ ¢
Approximate cost of power if purchased, per kw. hour.....	2¢
Estimated 1937 saving to college from plant operation.....	\$2,240.00

VIII. STATUS OF PROJECT FUND

The ability of California Polytechnic students to conduct group and self-owned projects for educational purposes, is dependent upon a unique, project revolving fund which now has a net value of approximately \$31,000.00. This fund was originally established by a straight loan made from the bank and signed by certain faculty members. Profits from project fund operation and interest on project loans have long since repaid the original bank loan and have built up a fund sufficient for the financing of student projects on a revolving basis.

Boys are enabled to borrow money from this fund for the purchase of feeder or foundation livestock or poultry, or the financing of crops or other agricultural or industrial enterprises. When the product is marketed, the fund is repaid with interest. In addition, from the gross profit of the student, one-third is returned to the project fund as insurance against decreasing inventories, losses in student project operation and other causes likely to cause a decrease in the fund.

In the years of operation, this revolving loan fund has constantly increased in value. In some years, this takes extremely careful management, due to high livestock feed prices. However, group buying of feed through the project fund enables students to put market livestock in condition at reasonable costs. The attached sheet shows the status of the project fund as of October, 30, 1938 (last complete available report).

Project Fund
Balance Sheet as of October 31, 1938

Assets

<u>Current</u>			
Cash:	In Bank	\$1895.96	
	On Hand	<u>15.00</u>	\$1910.96
Accounts Receivable		9200.35	
Less Reserve for Doubtful Accts.		<u>214.62</u>	8985.73
Inventories:	Live Stock	16091.30	
	Feed	8318.85	
	Industrial Dept. Supp.	<u>607.87</u>	<u>25018.02</u>
			\$35914.71
 <u>Fixed and Deferred Assets</u>			
Equipment			293.88
Prepaid Accounts			<u>50.16</u>
Total Assets			<u>\$36258.75</u>

Liabilities

<u>Current</u>			
Accounts Payable		3173.53	
Notes Payable		1000.00	
Accrued Accounts		658.51	
State: Livestock Expense		<u>524.80</u>	<u>5356.84</u>
Accumulated Income, November 30, 1938			\$ <u>30901.91</u>

IX. STUDENT LABOR

Under American mass education practiced today, competition for student jobs is very intense and thousands of deserving students are unable to begin or continue college education because of lack of even a few dollars a month.

The objective at California Polytechnic is to spread employment to as many different individuals as possible, and to give work to those most seriously in need of it. It is probable that there is no other public college in the United States where the proportion of student labor to adult labor in campus jobs is so high. For the care of the entire 85-acre campus, with its 66 buildings, and the 1400-acre farm, there are employed only three maintenance men, two farmhands, one full-time herdsman who is also an instructor in animal husbandry, and

four graduate assistants. All of the janitor and dining hall work, except cooking, all the milking and feeding, care of the livestock, operation of the power plant, maintenance of the grounds, is done by students.

The following statement of a typical month (October) shows that 374 boys were employed in some capacity. There is some duplication in this figure, caused by boys being employed from two different funds at the same time. This is illustrated by the next succeeding table showing some interesting statistics of agricultural students.

Analysis of Student Labor
October, 1938
(from Payrolls)

* * *

<u>STATE</u>	<u>Classification</u>	<u>No. of Employees</u>	<u>Payroll</u>	<u>Totals</u>
	Administration (Office)	4	\$ 88.20	\$ 88.20
	Instruction - Agriculture	9	61.50	
	Industry	5	71.25	
	Related Subjects	11	165.00	297.75
M & O	Janitors	30	264.15	
	Ground Keepers	37	425.05	
	Auto Service	2	102.80	792.00
Farm	Crops	1	20.55	
	Dairy	6	19.65	
	Meat Animals	6	160.00	
	General	50	496.05	
	Poultry	3	65.10	
	Ag. Mechanics	8	33.60	794.95
	Total State	<u>172</u>		\$ <u>1972.90</u>
<u>PROJECT FUND</u>				
	Dairy	21	436.53	
	Meat Animals	6	58.50	
	Poultry	10	173.35	
	Horticulture	15	35.25	
	Total Project Fund	<u>52</u>		\$ <u>703.63</u>

<u>Classification</u>	<u>No. of Employees</u>	<u>Payroll</u>	<u>Totals</u>
<u>CAFETERIA-DORMITORY FUND</u>			
Cafeteria	62	\$ 906.16	
Dormitories	26	261.52	
Power House	6	158.35	
Miscellaneous	<u>1</u>	<u>9.60</u>	
Total Cafeteria-Dormitory	<u>95</u>		\$ <u>1335.63</u>
<u>FEDERAL N. Y. A.</u>	<u>55</u>		\$ <u>619.80</u>
Total Students' Wages	<u>374</u>		\$ <u>4632.06</u>

The following table shows that during the summer months, boys have opportunity for considerably larger earnings than during the school year. The average student salary paid of \$18.84 in the agricultural department will be considerably reduced for the student body as a whole, since the industrial students do not have an opportunity to earn as much as the agricultural students.

SUMMARY OF STUDENT LABOR - AGRICULTURAL DIVISION - CALIFORNIA POLYTECHNIC

1938	July	August	September	October	November
Number on State Payroll	45	26	45	92	79
Number on Project Payroll	16	17	52	49	45
Number on N.Y.A. Payroll	0	0	0	21	28
Total Number on Payrolls	61	43	97	162	152
Counted twice	5	4	15	10	15
Separate individuals on Payrolls	56	39	82	152	137
Graduate Assistants	4	4	3	4	4
Average salary of Graduate Assistants	102.50	102.50	103.33	102.50	102.50
Amount of State Payroll	2367.00	1216.80	875.55	1379.10	1251.30
Amount of Project Payroll	636.50	819.10	800.60	694.83	660.40
Amount of N.Y.A. Payroll	.00	.00	.00	173.70	315.30
Total for month	3003.50	2035.90	1676.15	2247.63	2227.00
Highest salary paid (does not include G.A.)	114.20	92.00	79.60	89.00	81.40
Lowest salary paid	.90	1.20	.30	.30	.90
Average for month (All salaries)	53.63	52.20	20.44	14.78	16.20
Average of State Salaries	52.60	46.80	19.46	15.00	15.80
Average of Project Salaries	39.80	48.00	15.40	14.20	14.70
Average N.Y.A.	.00	.00	.00	8.27	11.26

Note: Totals include student labor expenditures at the Voorhis Unit, as well as at San Luis Obispo.

This summary includes the time of students working at the auto shop, but does not include any record of any agricultural student who receives any remuneration from the Cafeteria-Dormitory Funds.

X. STUDENT PLACEMENT

The purpose of all instruction at California Polytechnic is to train for gainful employment. The responsibility of the college is not fulfilled until every effort has been made to place the student in the type of position for which he has been trained. In the case of agriculture students, many do not want outside employment, preferring to go back to the home ranch, or to open an agricultural enterprise of their own.

The college allocates some of the time of two individuals to the placement function, although neither is able to devote the time which could be used with value to survey the placement field as well as actually get employer and employee together.

For the last few years, it has been possible to place virtually every recommended graduate in each major field, and in many occupations, the school falls far short of supplying the demand.

PRESENT OCCUPATIONS OF 1938 AGRICULTURE GRADUATES

-- Agricultural Inspection --

Charles J. Agbashian....Grape pro-rate, Fresno

Fred C. Alley....Border inspection, State of California

Gunnar O. Sondeno....Border inspection, State of California

Richard Sparks....Inspection work in San Joaquin Valley

-- Dairy Production --

L. Marion Fosberg....Now working as graduate assistant at C. P. S. and establishing a Holstein herd at Turlock.

Leonard W. Frame....Worked for Rocky Hill Farms, Exeter, for several months; then went home to help on the farm.

Howard T. Hudson....Working at home, King City. Plans to take further work for degree next year.

Elwood Russell....Taking degree work at Washington State College.

-- Meat Animals --

Roger Barney....Returned to California Polytechnic for additional work in meat animal husbandry.

Hugh Dangers....Assistant herdsman on a beef cattle ranch in Petaluma, California.

Marvin Danley....Raising sheep on his own farm at Willows.

Earl Foor....Returned to California Polytechnic for graduate work in meat animals.

W. N. Helphenstine....Herdsman on a beef cattle ranch in Smith, Nev.

Harold Laux....Raising hogs on his own ranch in Colusa, Calif.

Marcel Layous....Raising hogs on his own ranch in King City, Calif.

Aldo Tognetti....Operating his own farm in King City, raising sugar beets, beef cattle, dairy cattle, and hogs.

Andrew Witmer....Working on ranch at Santa Barbara.

Seymour Vann....Managing his father's grain and sheep ranch at Williams.

-- Landscape --

Carl Tunison....Expects to work for Ford Co. at Golden Gate International Exposition.

-- Poultry --

Frisbie V. Brown....In business for himself and with his father at Simi, Calif., on poultry and fruit ranch.

Marvin E. Hare....Employed at Howards Poultry Ranch, Rio Linda, in trapnesting and brooding.

James F. Harter....In business for himself on turkey ranch at Fresno.

Clifford Lambert....Started in business in Sacramento with parents on new poultry ranch.

Paul M. McDonald....In poultry and hatchery business as partner with father at Gerber.

Richard Macbeth....Started and bought turkey and fruit ranch at Hemet, Calif.

PRESENT OCCUPATIONS OF 1938 INDUSTRIAL GRADUATES

-- Aeronautics --

Melvin Burton....service and maintenance at Sky Harbor airport, Pheonix,
Ariz.

Ben Cosner....mechanic, Santa Maria air lines, Santa Maria.

Byron Ellis....mechanic, experimental department, Lockheed Aircraft
corporation, Burbank.

Harold Lilley....mechanic, Pan-American Airways, Alameda.

Robert Livesey....mechanic, Lockheed Aircraft corporation, Burbank.

Chauncey McDonald....Shell Oil Co., King City.

George Milne....mechanic, Lockheed Aircraft corporation, Burbank.

Henry Null....mechanic, Lockheed Aircraft corporation, Burbank.

Ellis Parker....mechanic, Pan-American Airways, Alameda.

Maurice Rush....mechanic, Lockheed Aircraft corporation, Burbank.

Glen Sackett....mechanic, Lockheed Aircraft corporation, Burbank.

Ben Shirey....parts department, Air Associates company, Glendale.

Tatsumi Suehiro....mechanic, Paul Mantz Air service, Burbank.

Melvin West....draftsman, engines department, Lockheed Aircraft corporation,
Burbank.

Melvin Williams....draftsman, engines department, Lockheed Aircraft
corporation, Burbank.

Hershel Abe....Back in school for further instruction.

Paul Spani....Returned to school for further instruction.

James Stanton....Returned to school for further instruction.

-- Air Conditioning --

Harvey Bonham....mechanic, Frigidaire company, San Bernardino.
Francis Cantrill....mechanic, Foss Heating company, Pasadena.
Raymond Carpenter....police department, Santa Cruz.
Sidney Frantz.....service work in San Diego.
George Jagla....mechanic, Swift and company, San Francisco.
Jack Hansen....mechanic, Air-Temp agency, Bakersfield.
John Lohrberg.....Shell Oil company, Martinez.
James McGrath....mechanic, Merchants Ice and Cold Storage, San Francisco.
Evins Naman.....Sales, York Dyer company, Fresno.
LeRoy Naman....engineering, York Dyer company, Fresno.
Marvin Naman....sales, Cyclop representative, Fresno.
William Phelan....mechanic, Bakersfield.
William Sales....mechanic, Foss Heating company, Pasadena.
Robert Slicton....mechanic, Merchants Ice and Cold Storage, San Francisco.
Grant Thorne....mechanic, sheet metal work in Berkeley.
Thomas Topham....engineer, York-Derbe, Riverside.
Reginald Brown....returned to school.
Jack O'Brien....returned to school.

-- Electrical --

John Rutherford....laboratory of P. G. & E., Emeryville.
Peter Giampaoli....meter department, P. G. & E., Redding.
Edward Lawrence....line department, San Joaquin Light & Power, Fresno.
Edwin Chiles....laboratory, Shell Development company, Emeryville.
Norman Heikes....laboratory, Shell Development company, Emeryville.
Thomas Tait....laboratory, Shell Development company, Emeryville.
Raymond Williams....mechanic, South West Welding and manufacturing
company, Alhambra.
Donald Alderman....returned to school for further instruction.
Lawrence Barre....back in school for further instruction.
Ronald Dumont....returned to school for further instruction.
Milton Sendeno....back in school for further work.
Donald Stansifer....returned to school for further instruction.

XI. SERVICE TO AGRICULTURE

The service of the California Polytechnic School to agriculture in supplying high school projects with purebred foundation livestock, hatching eggs and seed, has been discussed in detail in previous reports. Mention has also been made of the importance of the teacher training program at the Polytechnic School.

During the last year, a move was made to make all service functions even more tangible. This consisted of centralizing all of the bureau functions at San Luis Obispo, except two regional supervisors remaining at Sacramento and Los Angeles, and the teacher trainer remaining at Davis for undergraduate instruction of teaching prospects at the University of California.

The office of the bureau at California Polytechnic now includes, in addition to the chief of the bureau who is also the president of the Polytechnic School, an assistant state supervisor, two of the regional supervisors who operate from this central point, and subject matter specialists who assist in preparation of teaching material and other functions. All offices were recently coordinated in a physical manner in one building.

The service of California Polytechnic in teacher training is highly important. Most of the agricultural college graduates who are accepted as trainees need considerable farm and farm mechanics experience to teach the necessary skills. A part of the year is spent at California Polytechnic getting these manipulative skills.

Some of the services provided for agricultural education include: Publication of the California Future Farmer magazine for 9600 agriculture students and cooperators, presentation of 90 educational radio programs, cooperating in the training of 28 prospective high school vocational agriculture teachers, preparation of teaching materials for the 175 high school vocational agriculture departments, and furnishing foundation and market livestock and poultry for these Future Farmers of America projects.

In the latter connection, it is interesting to note that the following were sold to high school boys over the state: Five breeding beef cows, 20 fat lambs, 10 breeding ewes, 3 rams, 12 breeding sows, and six breeding boars. In poultry, \$1800 worth of hatching eggs and baby chicks were sold to Future Farmers.

Typical of service to other state or federal agencies is the work done by the agricultural inspection and fruit divisions. The inspection students have been conducting field studies in rodent control for the State Department of Agriculture. Red scale count was also made on citrus orchards in the vicinity of the Voorhis Unit.

Typical of service to the public at large are the demonstrations and open-house days at which livestock and poultrymen are invited to see methods and records. The Poly Royal show each spring bringing 4000 to 5000 farmers to see the classes, is the most extensive; but during the year many farmers' meetings are held on the campus using local stock, poultry or crops areas for demonstration purposes. Ten breeding boars and gilts were sold to adult stockmen through the state, increasing general livestock quality and performing a needed service.

XII. COLLEGE VETERINARIAN

During the fiscal year there were 276 service calls on the campus to care for stock belonging to the school or to projects of students. This represents about 2500 individual services, such as caring for sick animals, testing for Bang's disease, and tuberculosis, and vaccinations for various diseases.

Inspection of meat slaughtered for use in the college cafeteria was continued as of the previous year. Sixty-one animals were inspected. The inspection service feature is made to comply as closely as possible to the requirements of the meat inspection service of the state department of agriculture. More adequate facilities for slaughtering and storing meat are needed as the enrollment increases.

An additional demand for advice and information to the vocational agricultural instructors in the various high schools has been met. Various livestock sanitary problems have been presented to the cadet teachers here in training. Correspondence with high school instructors has been increasing.

XIII. THE COUNSELING SYSTEM

In the conventional school, counseling has the major objective of directing youthful minds into the proper occupational channels or levels of the professions, vocations or general culture. Students are groping to determine the occupational field for which they are best fitted.

At California Polytechnic, since students are immediately specializing as to occupation, the counseling system is devoted both to the level of instruction and to the field. There are three major curricular levels, the two-year vocational, the three-year technical and the three-year degree-transfer. The basis of all of these is terminal in nature, leading to employment; the first two directly to placement, and the latter to another institution for a year or more of additional (often largely academic) matriculation.

The three-year technical curricula most closely approximates the ideal terminal course as we see it, because it contains enough basic science for a thorough foundation in technical and vocational accomplishment, with a minimum of extraneous matter. The two-year vocational curricula is lacking principally in the basic sciences, but is set up for those who want only two years of work of a vocational level beyond high school, or those incapable of profiting by foundation science courses. The three-year degree-transfer curricula, on the other hand, embraces sciences beyond those necessary for the young man going directly into employment; but is set up for those who desire the honor of an academic degree plus a maximum of technical skills.

The purpose of the counseling system is to keep in the three-year technical curricula, all of those and only those most likely to profit by that level of instruction. Exceptional students who may have registered in the two-year curricula but who have sufficient mental abilities and financial backing are encouraged to transfer to the three-year course. Likewise, young men who are not succeeding in the technical curricula but who have abilities equal to the vocational work, are encouraged to re-register in the latter.

Occasionally a student in the three-year curricula develops aptitudes which would make him successful in work demanding a college degree, such as agricultural teaching, veterinary medicine, or specialist in one of the many government and private agricultural services. If this student has the preparatory school requirements and mental capacity for work of degree type, he is encouraged in this direction. At the same time, boys who enroll in degree-transfer work and who after a quarter demonstrate that they should confine their work to the three-year technical, are so counseled. In all of this the ultimate welfare of the student as a useful member of society, is kept uppermost in the counseling system.

XIV. PROPOSED BUILDING PROGRAM

Principal classroom and administration buildings at California Polytechnic were erected in 1902-03, 1907-08, and 1911. They were all of frame construction, covered with stucco. Subsequent administrations altered the interiors of these buildings to fit changing class needs, removing partitions and supports without regard to the substantiability of the remaining structure. Termites have done a thorough job on the supports of the four original buildings. None of them is fit for modern college use, and all have been condemned. Two of them have been replaced up to the present time. The other two will have to be used until adequate facilities can be prepared.

Some portions or wings of new buildings would probably come where present antiquated buildings are standing, so that it is necessary to eventually level off the whole area before much permanent construction in the new administration quadrangle can take place.

Major immediate needs are for an assembly hall, more classroom buildings, air conditioning building, aeronautics building, and administrative offices. These would all be in the central campus unit or units. Other buildings which might be in the outlying acreage are a sheep unit, slaughter house, horticulture unit, beef breeding unit, farm mechanics shop, maternity barn for dairy unit, two new laying houses and two breeding units for poultry, feed warehouse, and a number of others of a similar nature.

XV. CURRICULA RELATIONSHIP WITH OTHER INSTITUTIONS

In general, it may be said that our curricular relationship with other institutions has improved during the past year.

California Polytechnic School operated for so long, first as a high school, and then for a time as a high school plus a junior college branch, that the other collegiate institutions were slow to appreciate the major change made in this state institution from 1933 on.

Up to recently, the attitude on the part of the other institutions has been to indicate a fear that boys without sufficient transcript value, either scholastically or subjectively, will use California Polytechnic as a "back door" to enter the degree-granting institution which they could not have entered directly.

Nothing is more removed from the truth. Standards for the degree-transfer curricula at Polytechnic are higher than those of any institution to which transfer might be made. Students must get no grade lower than "B" in a number of basic courses, and no grades below "C" in any of the related subjects, before transfer will be recommended. In most institutions, students can and do progress quite satisfactorily with a "C" average.

Not only is it more difficult (instead of less) for a student to attempt to use Polytechnic as a stepping-stone to an academic college, but he must have had preparatory school grades and subjects which would have permitted him to enter that institution directly before enrolling at Polytechnic, or must make them up at San Luis Obispo high school or junior college, or in some other fashion, before transferring. No make-up work of any kind is given at California Polytechnic.

XVI. FUTURE NEEDS.

California Polytechnic School has no immediate needs that cannot be carried out under its present program for financial support and curricula changes. As outlined earlier in this report, increasing enrollment makes it necessary for this institution to curtail the number of students in certain fields, and to carefully explore the occupational opportunities for new curricula.

In general, it may be said that these new curricula will in no way duplicate or overlap work now being done in any public institution, but will attempt to put on an organized basis considerable now being done as apprenticeship by private firms, each one operating in its own particular direction.

The purpose of this move is obvious. The young man out of high school going into an industrial firm as an apprentice, or into agricultural employment as a common laborer, may never rise above that point. As an apprentice or laborer, he learns how but he never learns why. The entire purpose of instruction at California Polytechnic is to give him both why and how, with the addition of social life and culture in a college atmosphere which most young men -- especially those from small towns and farms -- badly need.

Back of each venture are a few highly-trained scientists and engineers, doing the planning. This field lies within the functions of the university. At the other extreme are the laborers, told each day what to do and how to do it. Between the two are the foremen and superintendents. It is the purpose of this technical college to give the undergraduates all of the technical knowledge and all of the manipulative skills possible in the period of matriculation. They will enter employment as skilled workers, but if their training is functioning as it should, they will make in a few years the second ranking executives, or in some instances the top ranking ones.

This objective, and the opportunity to carry it out, are in evidence at this state college. Educators, employers, and parents daily gain an improved respect for, and understanding of this college.

Its major future need, therefore, is to be "left alone" in terms of exterior influence, to carry out the program which it has started, and in which it is making measureable progress.

Respectfully submitted,

Julian A. McPhee

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President