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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, 1938

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POLYTECHNIC SCHOOL, SAN LUIS OBISPO, CALIFORNIA - JANUARY, 1938

FOREWORD: This is the Fourth 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 three previous annual summaries. It is sincerely hoped that the members of the State Board of Education, and others to whom this report is made available, will gain from it a picture of the progress and problems of this technical college branch in the state's educational system.

I. HISTORY

A detailed history of the California Polytechnic School was carried in the first report of this type, made four years ago. For the benefit of new members of the Board, some of the salient facts are repeated.

California Polytechnic School was established in 1901, and classes were started in 1903. At that time, the idea of vocational and technical instruction was a radical departure in education. A few such schools--many of them private institutions--existed at that time, but probably none west of the Mississippi River.

For about 18 or 20 years, the conduct of the school was sound, and its progress about as rapid as might be expected in view of the highly academic nature of all instruction in surrounding schools and colleges. Enrollment at Polytechnic was always small, rarely reaching the 200-mark, but this seems to have been largely because the educational philosophy of the institution was in advance of the times.

When the federal Smith-Hughes act brought reimbursement to high schools for teaching vocational courses, California Polytechnic might have seized an opportunity to do what the normal schools were doing--advance the level of instruction to that of at least the lower division of college--while retaining the practical and technical nature of the instruction. Instead, the school remained as an anachronism--a state high school giving vocational instruction

relatively the same as that being offered in domestic science, trade and industry and agriculture classes. This was followed by a period of administration problems, coupled with unfortunate selection of undergraduates for the purpose of building up enrollment.

In the early '30's, it became evident that policy changes were necessary, or the Polytechnic school would have to be abandoned. A study showed excellent opportunity for the placement of trained graduates in the fields offered at the school, provided the right type of student was enrolled and the instruction was of an age and pedagogical level which would lead the graduate into employment. In short, it was useless to try to place a boy 17 or 18 years of age, who had perhaps been in the lower ability quotient on enrolling. It was found comparatively easy to place a young man 20 or 21 years of age who had been average or better in high school and whose work after high school graduation was of technical college level. The State Department of Education then stepped in and took over the direct administration of the school, placing a staff member in charge.

The high school courses were eliminated, as were the academic junior college courses. In their place was established a technical college curricula consisting of two-year and three-year courses; graduated from a two-year vocational curricula for those desiring a maximum of manipulative skills in a limited educational period, to the three-year degree-transfer curricula for those desiring a maximum of the scientific background, plus manipulative skills, plus an opportunity to transfer to a conventional college or university for the additional one or two years required for the bachelor of science degree.

Since 1933, when the school was taken in hand by the State Department of Education, its progress has been steady. Enrollment has increased each year, although standards for entrance have been lifted. This has been essential because of 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 95 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. The type of training given 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 in the field for which they have been trained. In the future, it will probably be necessary to limit the enrollment in the "popular" departments of meat animals husbandry, aeronautics, and air conditioning, while building up other present and new fields to about the desirable maximum.

* See Section XIV - General Future Needs.

II. 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>88th Fiscal Year</u>		<u>89th Fiscal Year</u>	
	<u>Amounts</u>	<u>Percentages</u>	<u>Amounts</u>	<u>Percentages</u>
Salaries & Wages	\$91,383.17	68.80	\$117,653.38	70
Mat. & Supplies	21,980.00	16.54	23,613.00	14
Service & Expense	10,120.00	7.61	13,155.00	8
Prop. & Equipment	9,370.00	7.05	12,810.00	8
	<u>\$132,853.00</u>	<u>100.00</u>	<u>\$167,231.38</u>	<u>100</u>

The above increase of \$26,270.00 in salaries and wages comes from a combination of conditions. Primary cause was setting up seven new positions made necessary by the tremendous increase in administrative and teaching work caused by an increase of about 25 per cent in enrollment. The new positions were:

- Dean of Instruction
- Director of Agricultural Education
- Instructor in Agriculture (two)
- Instructor in Industrial Subjects
- Instructor in Related Subjects
- Maintenance Assistant

In addition, civil service employes received a raise to the next range of their salary schedules, and a 5 per cent cut in salaries of faculty members in force for the last five years, was restored for the present fiscal year. Four agriculture instructors whose salaries had been paid half out of Smith-Hughes funds, were restored to the California Polytechnic School budget.

Although increases in the budget as explained above do not entirely represent actual current increases in expenditures for educational purposes (as for example the transfer of the part of the salaries of the four instruc-

tors from Smith-Hughes to Polytechnic funds) using the total figures we find the following:

Per pupil cost 88th fiscal year (January 1, 1937)
(\$132,853 divided by 344 students)..... \$415.00

*Per pupil cost 89th fiscal year (January 20, 1938)
(\$167,231.38 divided by 480 students)..... \$327.00

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 20, 1938, 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, we find the following:

Pupil cost per equivalent full-time registration,
89th fiscal year (\$167,231.38 divided by 581).....\$288.00

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 to seven

*Allowance should be made for the fact that enrollment figures in these lines were taken at different times. The current figure includes some winter quarter enrollment not included in the 1936-37 figure.

** See Section III - Enrollment

in the morning until ten or eleven o'clock at night in the combination of class work, demonstration, project supervision and finally, management of the college-owned foundation herds and flocks.

Thus it is evident that the comparable figure of \$288.00 per full-time equivalent registration is extremely low compared even with many of the academic colleges where extensive 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.

III. 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 "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 previous annual report was prepared prior to registration for the winter quarter; the current report was prepared after registration for the winter quarter. Since some 38 new students were enrolled during the first week in January, 1938, the difference shows an actual growth during the year of approximately 100 students.

Further study of the enrollment by counties shows that California Polytechnic serves students from 48 of the state's 58 counties--a spread equalled only by the University of California. Only one county from which a student was enrolled last year--San Mateo--sent no students this year, while enrollees were added from the new counties of El Dorado, Lassen, Modoc, Nevada, San Benito and Shasta. Forty counties sent more students to California Polytechnic during the current year, than the last one, six sent an equal number, and four (including San Mateo) sent less. Total "loss" represented a difference of only five students.

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

<u>County</u>	<u>January 1, 1937</u>	<u>*January 20, 1938</u>	<u>Loss or Gain</u>
Alameda	7	12	+
Butte	2	2	=
Colusa	5	7	+
Contra Costa	1	4	+
El Dorado	0	1	+
Fresno	20	27	+
Glenn	1	4	+
Humboldt	5	9	+
Imperial	3	7	+
Inyo	1	2	+
Kern	2	4	+
Kings	2	4	+
Lake	3	1	-
Lassen	0	1	+
Los Angeles	64	83	+
Madera	3	4	+
Mendocino	2	3	+
Marin	2	2	=
Merced	10	13	+
Modoc	0	2	+
Monterey	6	7	+
Napa	5	6	+
Nevada	0	1	+
Orange	9	19	+
Placer	1	2	+
Riverside	4	5	+
Sacramento	2	3	+
San Benito	0	1	+
San Bernardino	10	10	=
San Diego	17	30	+
San Francisco	1	3	+
San Joaquin	4	6	+
San Luis Obispo	40	52	+
San Mateo	1	0	-
Santa Barbara	19	28	+
Santa Clara	5	14	+
Santa Cruz	3	5	+
Siskiyou	2	1	-
Shasta	0	3	+
Solano	7	9	+
Sonoma	11	15	+
Stanislaus	10	15	+
Sutter	1	1	=
Tehama	2	4	+
Tuolumne	1	1	=
Tulare	14	16	+
Ventura	4	6	+
Yolo	2	8	+
Yuba	2	1	-
Other States & Countries	<u>29</u>	<u>16</u>	
	344	480	

*Includes 38 students enrolled for the winter quarter, 1937-38.

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 580.9 or 581 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	263	$17\frac{1}{2}$	306.1
Industry	<u>217</u>	19	<u>274.8</u>
Total	480		580.9

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.

IV. STATUS OF EQUIPMENT AND BUILDINGS

During the past year, no new buildings have been started, although tentative plans have been drawn for several, and needs are in some cases quite critical.

Reason for starting no new construction is the slowness with which the work already begun has been proceeding. All work is in the hands of the State Department of Public Works, including getting actual architectural drawings completed and construction accomplished. The Department of Public Works reports they cannot operate any more rapidly because of the large amount of work for which appropriations were made at the last session of the legislature.

Many improvements have been made on the grounds. A new campus entrance was recently laid out, including sidewalks leading to the dormitory row, curbing and planting of shrubbery. Two new doubles tennis courts were put in use near the entrance, so the new landscaping enhances the appearance of both the boulevard and the tennis courts.

About fifteen acres of campus have been landscaped, and the athletic field moved, graded and fenced. Eight new wells have been drilled, of which three appear to be successful. A new domestic water supply system is being completed, and complete new fire-fighting apparatus set up to reduce the fire hazards on our 63 wooden frame buildings on the campus and farm.

A new school bus has been purchased for field trips of students to neighboring ranches and industrial plants, as part of the technical instruction carried on at the school. Two new garages have been completed, one for student cars, rented at a nominal cost; and the other for the school's automotive equipment.

The indoor plunge was principally constructed during the year and will be ready for occupancy about March 1. It is one of the most modern plants in the west, and greatly improves the physical appearance of the

campus.

Work has also just been completed on a soil erosion control project carried on in conjunction with the soil conservation service office at Santa Paula. This project embraces 100 acres of rolling crop land, which had been gradually losing its top soil and was becoming badly gullied due to cultivation and heavy rains.

Terraces have been constructed every 200 feet on this tract, each terrace draining to a natural baranca. Terrace outlets have been built of concrete and corrugated pipe to prevent drainage outlets from "cutting back". This improvement has added to the available land by filling in ditches, and is expected to stop most of the erosion. The land is planted to vetch and oats, and early heavy rains were handled very well.

Cost of the work was as follows:

Concrete and pipe for outlets.....	\$174.53
Student labor.....	232.95
Tractor fuel.....	131.19
Miscellaneous.....	<u>33.00</u>
Total	\$571.67

This valuable work, however, was virtually paid for by benefit payments from the Soil Conservation Service for planting soil-building crops, and the actual project cost but 86 cents an acre, in addition to providing an excellent demonstration project for the agricultural students and residents of the coast counties.

Other improvements included straightening an important road on the farm going under the Southern Pacific tracks, and construction of a new bridge over a stream which also flows through the underpass.

V. PROJECT OPERATION

Operations of the various student individual and group projects is the most important single function 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 represent some of the statistics in project operation:

AGRICULTURAL PROJECTS

--Market Livestock--

Market livestock owned and fed out by the 109 students in the meat animals department were:

Beef cattle.....	139
Sheep	79
Swine	343
Market value of above	\$19,530.26
Student project expense.....	\$17,514.59
Profit to project owners.....	\$ 2,015.67

The project income was low because of unfavorable economic conditions.

Stock fed high-priced grain and hay was sold on a low market. Sixty-three boys fed out beef cattle, 10 had sheep projects and 28 had swine projects.

At the various livestock fairs, boys won \$1178 in beef cattle premiums, \$139 in sheep and \$124.50 in swine, a total of \$1441.50. The following table shows student winnings.

<u>Year</u>	<u>Show</u>	<u>Gr. Champ.</u>	<u>Champ.</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>	<u>5th</u>
1937	Interstate	1	5	17	18	9	7	6
1937	State Fair		1	5	4	3	2	-
1937	L. A. County Fair			4	3	2	1	1
1937	Great Western	<u>1</u>	<u>6</u>	<u>4</u>	<u>9</u>	<u>7</u>	<u>5</u>	<u>3</u>
				30	34	21	15	10

The above premiums were won in competition with adult breeders and feeders from all over western United States, except at the Interstate Show where competition included junior college students or boys two or three years out of high school but in continuation classes. High point of the year was the grand championship in market lambs won by Don Bullington at the Interstate, sold for a new world's record of \$10.25 per pound.

--Dairy Cattle--

The entire dairy unit is operated as a student project, with individual boys taking over the management and milking of certain cows. In addition, there are about 20 animals on the school farm owned by individual students. All of the animals are purebred Holsteins, Guernseys or Jerseys.

Average number in school project herd.....	100
Average number in student-owned projects.....	20
Average monthly student dairy project payroll.....	\$ 400
Number of students doing dairy herd improvement work in county.....	8
Average butterfat production of project herd.....	375 lbs.
Average commercial production of state.....	265 lbs.

A purebred Holstein heifer bred at the college and sold to a student two years ago as a calf, recently completed her first lactation as a two-year-old, producing 598 pounds of butterfat. This record stands 6th in the entire United States in this class.

--Poultry--

Laying projects	22
Brooding projects (Leghorn)	14
Brooding projects (meat birds).....	3
Average number of laying hens	1980
Turkeys raised for Thanksgiving & Christmas	175
Breeding cockerels sold to Future Farmers and poultrymen.....	385
Hatching eggs and chicks sold to Future Farmers....	\$1200
Student incomes from project earnings.....	\$1900
Hatching eggs sold during the year.....	45000

Seven hens made trapnest egg records of over 300 eggs during the year. Two hens made records of more than 320 eggs, one totaling 341 eggs. Twenty-three hundred individually pedigreed chicks were hatched and brooded in projects. Seven hundred fifty pedigreed pullets are in the trapnests.

--Fruits Projects--

Expansion of horticulture projects during the year followed the creation of agricultural inspection curricula requiring practice in packing house methods and disease control. During the year, students planted and cared for on the campus the following:

12 $\frac{1}{2}$ acres of deciduous fruits (including 60 varieties)

1 acre of grapes, planted in cooperation with the viticulture department of the College of Agriculture, U. of C.

2 acres of young citrus and sub-tropicals.

Near the close of the project year, the school project fund leased 10 acres of additional bearing orchard for further project use and demonstration by fruit husbandry and agricultural inspection majors as follows:

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

4 acres of walnuts

3 acres of almonds

1 $\frac{1}{2}$ acres of miscellaneous varieties.

--Crops Projects--

All crops projects were conducted by crops students as a group, with returns all going to the project fund. The projects were as follows:

Youngberries $\frac{1}{4}$ acre

Variety trials of beans, sorghum, sudan, etc..... 3 acres

Mixed vegetables 2 $\frac{3}{4}$ acres

Corn for ensilage, grain and vetch hay, alfalfa and other feeds grown on the college farm for livestock use, were not operated as crops projects.

--Landscape Projects--

Number of students participating in projects.....	25
Average monthly earnings.....	\$12.50
Number of ornamental trees planted on campus during the year	300
Number of flats of annual plants grown and planted on campus during the year.....	650
Number of ornamental shrubs planted on campus	500
Number of ornamental shrubs started for planting in 1938 and 1939	2000
Number of tuberous begonias grown for campus.....	4000
Number of acres of turf seeded.....	2 3/4

In addition to these campus projects, students drew landscaping plans for a county tuberculosis hospital, a wing for the county courthouse, two small city parks, one county playground, an addition to the Mission Garden, two churches, and four private residences.

Major projects in actual landscaping involved moving the college athletics field, improvement of the college boulevard entrance, and landscaping around the tennis courts.

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, etc.

Following are some of the statistics:

Number of planes completed in spring semester.....	2
Number in shop during year, partly completed.....	10
Value of work done on completed ships.....	\$450
Number of planes to be completed this year.....	3

--Air Conditioning Projects--

This is a 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.....	8
Commercial water coolers built.....	1
Plans for home air conditioning drawn.....	1
Campus refrigeration jobs installed (value \$300).....	2
Campus refrigeration service to present installation (value \$150).....	1
Campus heating and ventilating units installed (value \$1200).....	8

--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.....	46
Estimated value of services.....	\$600
Kilowatt hours of power generated in 1937 by student-operated campus plant	270,060
Cost of power from campus plant per kw. hour....	1.44¢
Cost of power if purchased, per kw. hour.....	2.20¢
Estimated 1937 saving to college from plant operation.....	\$ 2,250

VI. 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 more than \$29,000. 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, as in the current year when high-priced livestock fed high-priced grain went on a "recession" market. 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 November 30, 1937 (last complete available report)

Project Fund
Balance Sheet as of November 30, 1937

Assets

Current

Cash: In Bank	\$1,743.50	
On Hand	15.00	\$1,758.50
Accounts Receivable	9,116.80	
Less Reserve for Doubtful Accts.	633.83	8,482.97
Inventories: Live Stock	13,621.50	
Feed	8,979.00	
Industrial Dept. Supp.	400.00	23,000.50
		<u>\$33,241.97</u>

Fixed and Deferred Assets

Equipment		271.01
Prepaid Rent		247.90
Total Assets		<u>\$33,760.88</u>

Liabilities

Current

Accounts Payable	3,557.22	
Accrued Accounts	1,045.62	4,602.84
Accumulated Income, November 30, 1937		<u>\$29,158.04</u>

VII. STUDENT LABOR

One of the principal advantages of the California Polytechnic School has been the opportunity for deserving young men to earn part of their expenses. It is probable that there is no other 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 63 buildings, and the 1400-acre farm, there are employed only three maintenance men, two farmhands, one full-time herdsman, and four graduate assistants. All of the janitor and dining hall work except cooking is done by students. All of the milking and feeding is student-performed, and much of the plowing and harvesting is done by students. Landscape maintenance of the entire campus is done by boys.

This permits giving part-time work to a very large number of boys. The policy has been to spread the work so that many boys would make part of their expenses rather than a few making all of them.

The following statement of a typical month (October) shows that 251 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, 1937
(from Payrolls)

- - - - -

<u>Classification</u>	<u>No. of Employees</u>	<u>Payroll</u>	<u>Totals</u>
<u>STATE</u>			
Administration (Office)	3	\$ 45.75	\$ 45.75
Instruction - Industry	3	34.80	
Related Subjects	7	87.15	121.95
M & O			
Janitors	22	297.15	
Ground Keepers	15	224.85	
Auto Service	3	137.40	659.40
Farm			
Crops	4	70.20	
Dairy	3	36.90	
Meat Animals	4	86.20	
General	44	393.90	587.20
Total State	108		<u>\$1414.30</u>
<u>PROJECT FUND</u>			
Dairy	20	465.70	
Meat Animals	7	97.05	
Poultry	15	224.15	
Horticulture	7	25.65	
Total Project Fund	49		<u>\$ 812.55</u>

	<u>No. of Employees</u>	<u>Payroll</u>	<u>Totals</u>
<u>CAFETERIA-DORMITORY FUND</u>			
Cafeteria	27	\$ 585.20	
Dormitories	11	127.50	
Power House	3	108.51	
Miscellaneous	<u>2</u>	<u>21.00</u>	
Total Cafeteria-Dormitory	<u>43</u>		<u>\$842.21</u>
FEDERAL N. Y. A.	<u>51</u>		<u>\$517.23</u>
Total Students' Wages	<u>251</u>		<u>\$3586.29</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

1937	July	August	September	October	November	December
Number on State Payroll	36	38	61	76	66	56
Number on Project Payroll	18	16	49	48	46	38
Number on N.Y.A. Payroll			16	21	22	22
Working for board and room (Cafe-Dorm Fund)				8	10	14
Total number on payrolls	54	54	126	153	144	130
Counted twice	12	7	19	33	30	26
Separate individuals on payrolls	42	47	107	120	114	104
Graduate Assistants	2	2	4	4	4	4
Average salary of Graduate Assistants	93.70	94.70	81.25	95.00	95.00	95.00
Amount of State Payroll	1695.60	1603.25	1259.02	890.80	839.80	957.25
Amount of Project Payroll	692.75	641.25	802.49	812.35	756.50	585.76
Amount of N.Y.A. Payroll			168.35	211.38	244.20	216.00
Amount of Cafe-Dorm payroll (Board & Room)				192.00	184.40	200.50
Total for month	2388.35	2244.50	2229.86	2106.53	2024.90	1959.51
Highest salary paid (does not include G.A.)	93.60	124.80	85.50	49.80	45.45	83.07
Lowest salary paid	2.70	1.80	.60	.60	.30	.60
Average for month (All Salaries)	58.86	47.76	20.84	17.55	17.76	18.84
Average of State Salaries	47.10	42.19	20.64	11.71	12.72	17.09
Average of Proj. Salaries	38.43	40.09	16.37	16.92	16.44	15.41
Average N.Y.A.			10.52	10.06	11.10	9.82
Average of Cafe-Dorm				24.00	18.44	14.28

VIII. 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 employe 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. In brief, there are not as many total recommended graduates as could be placed, although occasionally, the number in one major gets ahead of the demand, while another major is turning out only a fraction of those who could be placed.

The following show some 1937 placement statistics:

--Meat Animals--

Don Bullington.....farming for himself, established purebred Hampshire Breeding farm at Raisin City, Fresno County.

Adolph Laux.....ranch manager, Colusa.

Ellis McClure.....market lamb feeder, South San Francisco Union Stock Yards.

Charles Millar.....construction work at Venice, California.

Eugene Bridgeford.....herdsman, Innisfail Milking Shorthorn Herd, Davis, California

Ernest Righettifarming with father and brother, San Luis Obispo, California.

John Gilli.....started own Hereford ranch, San Luis Obispo.

Malon Moore.....livestock feeder, San Jose Meat Company.

Burley Dooley.....livestock employee, Swift & Company, South San Francisco.

Rollin Lander...employed as graduate assistant swine herdsman, California Polytechnic.

Robert Nevin,.....poultry buyer, Swift & Company, San Luis Obispo.

Ival Ford.....farm foreman and assistant sheep feeder, Howard Vaughn ranch, Dixon, California

John R. Cockle.....assistant buyer, Armour & Company, Los Angeles.

Meat animals students who returned to California Polytechnic for additional instruction, or transferred to other colleges, include Richard Barrett, Gerald Haet, Hugh Dangers, Henry Lang, Marcel Layous, George Wilson and Shigeo Yamana.

--Dairy--

Ralph Samalar.....herdsman, Indian School, Moapa, Nevada

Charles Ball...employed at Millbrae Dairy, Millbrae, in charge of calf herd; employed at California Polytechnic as graduate assistant dairy herdsman.

Elwood Russell returned for further instruction, and Lindsay Boggess and Bernard Butcher transferred to Oregon State College for degree work. Clifford Bjork transferred to Washington State college for veterinary science work.

--Aeronautics--

Robert Hathaway....factory mechanic, Lockheed Aircraft Corporation, Burbank.

William Lincoln....airplane mechanic, Pan-American Airways, Alameda.

Merrill Rush...factory mechanic, Lockheed Aircraft Corporation,
Burbank.

Edward Lauppe...in commercial flying business for himself, San
Luis Obispo.

Floyd Long...returned to school for further instruction.

--Electrical Industries--

Charles Blecksmith...meter department, Southern California
Edison Company.

Robert Brenstein....sub-station operator, P.G. & E. Company, Santa
Rosa, California.

John Bryan....compressor repairman, Standard Gasoline Company,
Kettleman City.

Frank Clement....sub-station operator, P.G. & E. Company, Oakland.

James Cox.....power-plant operator, Nevada-California Power
Company, Bishop.

George Faustino....sub-station construction, Midland Counties
Public Service Company, Santa Maria.

Kauko Hallikainen....laboratory technician, Shell Development
laboratory, Emeryville.

Elwin Harmon....P. G. & E. Company, Oakland; transferred to the
Pan-American Airways, Alameda.

Roy Hunt...sub-station construction, Nevada-California Power Company.

Wilton Imhoff....power-plant operator, Southern California-Edison
Company, Big Creek.

Sam Ragan....power-plant operator, San Joaquin Light & Power
Company, Bass Lake.

Louis Sebach...maintenance electrician, Union Sugar Company,
Betteravia; transferred to laboratory technician, Shell Development Company,
Emeryville.

Chester Strader....telephone repairman, Western Electric Company,
Los Angeles.

Leo Young...Salesman, P. G. & E. Company, San Jose.

The following electrical industries students graduated but were not employed for the given reasons: Bernard Flower, did not wish placement; William Gallatin, returned to school after employment with Western Electric Company, could not pass physical test; Peter Giampaoli, returned to school; Wallace Grimes, working on farm at home; Welton Williams, physical disability.

Although there were many calls for students with training in landscaping and poultry, no recommended graduates were available. In the new fields of air conditioning and agricultural inspection, no graduates were available, but summer work was secured for many. Two air conditioning students found themselves so well situated in employment after summer ended that they did not return to college.

IX. SERVICE TO AGRICULTURE

The services of California Polytechnic to the agriculture of California was extended in three general fields: That provided through the State Bureau of Agricultural Education to the high school and junior college vocational agriculture program; that provided through other state or federal agricultural agencies, and that provided to the public generally.

Some of the services provided for agricultural education include: Publication of the California Future Farmer magazine for 9000 agriculture students and cooperators, presentation of 120 educational radio programs, cooperating in the training of 22 prospective high school vocational agriculture teachers, preparation of teaching materials for the 163 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: Two breeding beef cows, six steer calves, 13 wether lambs, four ewe lambs, three breeding rams, 28 breeding gilts and three breeding boars. In poultry, \$1200 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, with four boys a day doing a total of two weeks work. Thirty different boys participated. The work was done in San Luis Obispo County because of the availability of the agricultural inspection students. Another service performed for the local extension service of the University of California was variety trials on beans and grasses. A study was conducted in cooperation with the biological survey of the United States department of agriculture on injurious bird species. Still another study was conducted for the U. S. D. A. on grasshopper control. Virtually all of the work was done by students.

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. Twenty breeding boars and five breeding rams were sold to adult stockmen through the state, increasing general livestock quality and performing a needed service.

The training of agricultural teachers is another service. Through the State Bureau of Agricultural Education, about 20 or 25 college of

agricultural graduates from Davis, Berkeley, or other state universities, are selected each summer. These men spend half the next year doing practice teaching at high schools, and half the year adding to their manipulative skills and technical knowledge in agriculture, at California Polytechnic.

As an example of the service of Polytechnic in this matter, a recent survey showed the college of agriculture graduate from University of California, Oregon State College, or other land-grant institution, able to perform only about 16 to 20 per cent of the 200-odd skills necessary in the average high school agricultural teaching position. Many of these skills are in agricultural mechanics, which forms a major part of the graduate training of these "cadets" while at Polytechnic. However, all were lacking in ability to do many other skills, which must be developed during the cadet year. The following shows about the proportion of time spent in various fields:

Agricultural Mechanics.....	36 per cent
Poultry husbandry.....	12 per cent
Teaching methods.....	10 per cent
Orchard management.....	9 per cent
Crops management.....	9 per cent
Dairy husbandry.....	9 per cent
Meat animal husbandry.....	9 per cent
Landscape gardening.....	6 per cent
Veterinary Science.....	<u>2</u> per cent
Total	100 per cent

X. COLLEGE VETERINARIAN

In the fall of 1936, a veterinarian was added to the agriculture staff for the combined purpose of taking care of the many valuable animals on the campus, as well as teaching some of the animal sciences and farm

sanitation.

During 1937, the veterinarian made 282 calls on the campus, representing 3000 different services including vaccination of swine for cholera, beef for blackleg; testing bovine animals for tuberculosis and abortion. All reactors are eliminated as rapidly as they appear.

Another service of the veterinarian is the inspection of meat slaughtered at the college abbatoir and consumed by students through the dining hall. During the year the carcasses of 44 steers and six calves were inspected besides many hogs and sheep.

XI. 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 instead to the level of instruction rather than 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.

XII. 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 did a thorough job on the most recent structure of the four original buildings. None of them is fit for modern college use, and all have been condemned.

No new classroom building program has been pressed because of the many delays in completing the first block of agricultural buildings started two years ago. Matters are approaching a crisis in this regard. In the face of expanding offerings and increased enrollment, it is impossible to set up permanent laboratories, enlarge library facilities, conduct student assemblies, or even provide office space for faculty and administration, in structures about to be torn down.

Plans are now ready for some temporary buildings to take the place of the four original wood-and-stucco buildings. As soon as the temporary buildings are completed, the old ones will be torn down. Reason for the erection of the temporary structures is to permit an entirely new plot-plan with modern structures laid out as a long-time campus building program. Some portions or wings of the new buildings would probably come where present antiquated buildings are standing, so that it is necessary to level off the whole area.

Major immediate needs are for classroom space for all general classes (sciences, economics, mathematics, English, etc.) library, and administration offices. Secondary needs embrace an assembly hall. 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, addition to the aeronautics units, building for air conditioning classwork and laboratory, maternity barn for dairy unit, dormitory for milkers, two new laying houses and two breeding units for poultry, storage building for supplies, feed warehouse,

isolation barn for sick animals, hanger and landing field for aeronautics department, incinerator.

XIII. CURRICULA RELATIONSHIP WITH OTHER INSTITUTIONS

In general, it may be said that our curricular relationship with other institutions is not clear-cut.

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 have not yet appreciated the major change made in this state institution from 1933 on.

The general attitude on the part of other institutions seems 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 large 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. Many other institutions permit

provisional or conditional enrollment with make-up work paralleling collegiate work.

California Polytechnic curricula are set up for terminal courses leading to employment. Only exceptional students with full preparatory credentials, are recommended for transfer. There need be no fear on the part of other institutions in accepting the very few recommended transfers from Polytechnic.

Another factor not understood is that California Polytechnic offers three full years of college-level matriculation. There is a tendency on the part of some institutions to classify California Polytechnic as a junior college, and to refuse to accept more units than would be allowed junior college transfers. This is unfair and inequitable. The institution now gives three years of work as a maximum, but with the difficulty of fitting the pattern of our graduates into that of other institutions set up on more academic lines, it is probable that shortly, we will teach the fourth year ourselves and ask for the privilege of granting the Bachelor of Science degree, to the few students who would be prepared for and would profit by, this award.

XIV. GENERAL FUTURE NEEDS

Preceding sections have discussed building needs and the above section has touched upon curricula relationship problems. Perhaps this should be further explained. At present, California Polytechnic is the only state public institution dedicated to the technical fields of agriculture and industry. The original charter of the institution also embraced homemaking and commercial subjects. The State Board of Education has unlimited power in expanding the scope and level of this institution to meet the vocational and technical needs of the entire state.

At the present time, vocational education as such is not recognized in other institutions, in spite of the fact that one-third of all high school teachers in California are teaching vocational work. The academic institutions do not themselves agree on any pattern for training in vocational fields, yet they do not in turn agree with an ideal pattern for the training of people along vocational lines.

In discussing the cadet program for training agricultural teachers, it was pointed out that after graduation from an academic college or university, men are able to perform only 16 to 20 per cent of the technical skills required for high school vocational agricultural teaching. California Polytechnic third-year students are in general much farther advanced in this field, than the four-year college graduates. Polytechnic students are, of course, lacking in some of the advanced science work and the so-called "broadening" courses.

No other institution in California is so adequately equipped to give these necessary skills, while the rest of the science and cultural work can be added with little extra faculty or equipment. If a satisfactory arrangement could be worked out with existing institutions to permit the technical training pattern to fit into the academic pattern without loss of time for the undergraduate; and if vocational education in trade and industry, commercial subjects and homemaking as well as agriculture was recognized in other colleges, it would not be necessary for California Polytechnic to move toward what appears to be the inevitable course--the granting of degrees in vocational fields. There seems little possibility of such recognition.

For the last year there has been a demand for the addition of homemaking education for girls, as a branch school in a neighboring city. A recent meeting of vocational leaders brought up the whole problem of

training vocational teachers, with a searching inquiry into the possibility of establishing an all-inclusive vocational training center at Polytechnic.

This summer, we plan to have an outstanding summer session of two weeks for agriculture teachers, and we are planning to have some graduate school in the state administer the work to the extent that graduate credit can be granted to those enrolled. If the plan is successful, and the demand continues, we hope to expand the sessions in the following year into other fields, for homemaking, trade and industry, commercial and perhaps physical education teachers. Climatic conditions and living accommodations are ideal for such short-course fields. We want California Polytechnic to serve the needs of the entire state, as many months of the year as possible. With the continued whole-hearted support of the State Board of Education, we can do this.

Respectfully submitted,

Julian A. McPhee
Julian A. McPhee,
Director