University of Hawaii
Bulletin

REPORT FOR THE YEAR
1939-1940
Report for the Fiscal Year
July 1, 1939 to June 30, 1940
Honolulu, Hawaii,
November 1, 1940

To the Governor and Legislature
of the Territory of Hawaii:

Gentlemen:

Transmitted herewith is the report of the University of Hawaii for the fiscal year ended June 30, 1940, including the functions of the Psychological and Psychopathic Clinic, the Hawaii Agricultural Experiment Station, and the Agricultural Extension Service, all of which together summarize the varied activities of the institution.

The board of regents requests your consideration of the increasingly broad and important service the university is performing for the people of the Territory of Hawaii.

Respectfully,

D. L. Crawford
Secretary of the Board of Regents.
Once a year we have the opportunity to present to our supporting public, through the pages of this annual report, a general summary of what has been accomplished during the year and a brief statement as to how certain situations and problems have been met, how much our services have cost, and what the needs and the outlook appear to us to be for the next several years.

In the year ended on June 30, 1940, there was continued growth in student enrollments and further progress along several lines of public service. Altogether, it seems to have been a satisfactory year.

We do not speak of increases in student enrollments as an accomplishment, in the sense that a factory would report an increase in its output, but rather as a situation that has to be met. State universities, as a rule, are not trying to increase their student enrollments, and this university is no exception to that rule.

Several factors at work throughout the United States, including Hawaii, are causing increasingly large numbers of young men and young women to seek higher education in the universities, and it is becoming something of a national problem to decide whether this movement ought to be allowed to go unchecked, or whether some arbitrary limitation ought to be established. Meanwhile, the enrollment figures are mounting and the problem of giving adequate educational facilities to more and more students is becoming more difficult—to say nothing of the problem of helping more and more graduates to find suitable employment, such that they can feel that their years of training represent something of an asset both to themselves and to the social order that provided the facilities for that training.

The problem for this university is even more acute because we are on a rapidly rising wave of high school graduations and pressure upon us to increase our undergraduate enrollments is unusually strong. But notwithstanding this fact the 1939 legislature saw fit to appropriate to the university for 1939-41 an amount practically no larger than had been appropriated for the preceding biennium. The suggestion implicit in this action is that we should hold enrollment figures approximately at the 1939 level. While we were successful in retarding the rate of increase to a figure considerably below what would be proportional to the rapidly mounting numbers of high school graduates, it did not seem practicable to hold enrollments at any previous year's level.

To present our problem in terms of actual figures, I would point out that in 1930 there were 1479 graduates from all public and private
high schools in the territory, 2184 in 1935, and 4233 in 1940. Note
that the number has nearly trebled in ten years and has practically
doubled in the last five years. A comparison between the two last
biennial periods, 1937-39 and 1939-41, shows that the number of high
school graduates increased more than 40 per cent in the last two years
over the preceding two. Obviously, therefore, it was not reasonably
possible to hold our enrollment figures static, without working an in-
justice on many individuals. Undergraduate enrollments increased by
8 per cent over the preceding year, as the following tabulation of
figures will show:

<table>
<thead>
<tr>
<th></th>
<th>1938-39</th>
<th>1939-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates</td>
<td>1803</td>
<td>1947</td>
</tr>
<tr>
<td>Graduate students</td>
<td>481</td>
<td>478</td>
</tr>
<tr>
<td>Unclassified students</td>
<td>385</td>
<td>278</td>
</tr>
<tr>
<td>Noncredit students</td>
<td>247</td>
<td>180</td>
</tr>
<tr>
<td>Summer Session students</td>
<td>1284</td>
<td>1265</td>
</tr>
</tbody>
</table>

Admission Requirements

Admission requirements here are essentially similar to those of
comparable institutions on the mainland, but it should be borne in mind
that some state universities admit any and all high school graduates
who apply, if they have the required number of credits—a policy not
followed by the University of Hawaii. This institution selects from
among the applicants those who, by various tests and criteria, are
considered to have the necessary aptitude for higher education and the
capacity to profit from the university experience; we refuse admission
to the others, even though they may have the requisite number of high
school credit units.

In view of our physical limitations it seems to be necessary to
follow this selective policy, for the numbers applying each year for
admission are much larger than we could handle as students. From
the point of view of maintaining good standards of instruction, I be-
lieve that this is definitely a desirable policy to maintain, even though
it becomes now and then the cause of misunderstanding on the part
of our local public; for example, when some applicant (perhaps an out-
standing athlete) is refused admission here but is admitted into some
mainland university in which the selective policy is not followed.

Aptitude for higher education is measured partly by means of a
nationally used test which has been devised by experts; it is not an
intelligence test, nor a test of one’s knowledge of facts, but is designed
to test one’s ability to cope with the learning process at the higher
(university) level. Because one may not measure up well in this
aptitude test, it does not follow that he is “dumb” or stupid.

This aptitude test is only one of several means which we use in
our selective process, and is never the sole basis for refusing admission
to an applicant. The applicant’s high school record gives us, usually,
the best basis for judging his capacity for university work. Experience
in this and other universities has shown that a high school student
whose grade average, at graduation, puts him in the lowest third of
his class has an exceedingly slim chance of succeeding in a university. In fact, unless one is in the upper third, or at least the upper half, of his high school graduating class, his chances for success at the university level are scarcely worth taking. An admissions committee does more, of course, than consider average grades; it studies the high school record of each applicant in detail, for sometimes the grades in certain courses of study are more significant than general averages in judging university aptitude. Also, it should be noted that high school performance during the last years is more significant than that of earlier years.

Of much significance, also, is the judgment of the high school principal and teachers as to whether an applicant has a sufficiently good prospect of success in university work to warrant his admission. These people who have seen the applicant at work day after day should have a pretty good idea as to what he would do at the higher level of education. This is valuable to us, especially when our admissions officer is unable to have even a brief contact with the applicant in a personal interview.

Another basis of judgment is the applicant’s knowledge of English, his ability to read well and to express himself adequately, both orally and in writing. We believe that this is of large importance, and we are placing a good deal of emphasis upon it.

A point in our admissions rules which is not always understood well by our public is the special requirements in certain sections of the university. For example, not all who meet our general requirements for admission are qualified to enter our college of applied science, for in this section of the university we require a more advanced knowledge of mathematics than in the other colleges. Similarly, in teachers college there are more exacting English and personality requirements for admission than are imposed in the other colleges of the university. It sometimes happens, therefore, that an applicant who desires to go into schoolteaching as a profession may be refused admission to our teachers college, even though the general (basic) admission requirements of the university are met by that applicant.

Objectives

It might be well to remind ourselves that we have three definite objectives in this university: (1) education for citizenship, (2) professional or vocational training, and (3) cultural enrichment. The third can scarcely be separated from the other two, for a knowledge and understanding of what humanity has attempted and achieved in the past should make one better able to live effectively and usefully, while acquaintance with beauty in art and literature should make living more worth while.

It must be kept in mind that not all who attend our state universities do so for the purpose of preparing for a specific profession or vocation. Many of the women students, for example, are destined to become homemakers, and obviously the future welfare of the country is enhanced by the cultural enrichment of their lives.
Curriculum

The effort is made to offer instruction of standard quality in as many of the fields usually covered in American universities as there seems to be real need for in Hawaii. Some of these are not developed as fully here as in many mainland universities; a few are developed more extensively, because of peculiar fitness in this locality.

Several fields, notably social work training and government service, should be developed more fully than present budget limitations permit.

Although we have been urged to develop professional training in medicine, law, veterinary science, pharmacology, electrical and mechanical engineering, architecture, and some other fields, it has not seemed advisable to do so, mainly because of the high cost per graduate. In all of these fields we offer good foundation courses. For example, the Association of American Medical Colleges reports that in the past nine years the 68 premedical students who have gone from the University of Hawaii to mainland institutions have made a better average record than the graduates of most other universities and colleges in the country.

Graduate instruction is being held by us in a position of secondary importance, until the undergraduate curriculum has reached a point of really adequate development. Candidates for the doctor's degree are not admitted, except a few in certain sciences pertaining to tropical agriculture, in which we have the assistance of specialists in the three experiment stations. In due time, this policy should be broadened, but only when the territory can afford to give us funds adequate for the purpose. A moderate number of candidates for the master's degree are admitted, but most of their instruction is incidental to the main (undergraduate) function of the university.

Per Capita Cost of Instruction

The University of Hawaii, in company with some other state universities, computes its per capita cost of instruction by dividing the total expended for instruction by the theoretical number of full-time students, this number being obtained by dividing the total number of registered semester credit hours by the number of such credit hours that a student must take in order to meet the graduation requirements in the usual four-year period. This reduces to a standard basis all part-time students who register for less than the normal full-time load, and gives us a satisfactory means of comparing unit costs in successive years.

The per capita cost in this university has declined considerably in the past 20 years, from more than $500 to less than $300. In the last several years the unit costs have been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Per Capita Cost of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1933-34</td>
<td>$300.21</td>
</tr>
<tr>
<td>1934-35</td>
<td>282.38</td>
</tr>
<tr>
<td>1935-36</td>
<td>296.20</td>
</tr>
<tr>
<td>1936-37</td>
<td>291.71</td>
</tr>
<tr>
<td>1937-38</td>
<td>$300.64</td>
</tr>
<tr>
<td>1938-39</td>
<td>300.26</td>
</tr>
<tr>
<td>1939-40</td>
<td>276.17</td>
</tr>
<tr>
<td>Average</td>
<td>292.51</td>
</tr>
</tbody>
</table>
Comparable figures for mainland state universities are not readily available, as such information is rarely published. However, from conversations with administrators I have gained the impression that our unit costs are about the same as those in state universities of our class, and lower than in some of the large institutions.

Tuition and other fees paid by the average student amount to $125 to $130 per year, which is about 45 per cent of the above per capita cost. This seems to me to be a fair division of the burden of cost between the individual and society, for both benefit about equally—the student by an increase in his earning capacity, and society by an increase of the individual’s social usefulness.

Nearly all state universities charge substantial fees, although some still adhere to the policy of not calling them “tuition” fees. Those in which state residents pay fees amounting approximately to $100 or more per year at the undergraduate level are as follows:

University of Connecticut University of New Hampshire
" " Delaware " " New Jersey (Rutgers)
" " Georgia " " North Carolina
" " Hawaii " " Oregon
" " Iowa Pennsylvania State College
" " Kentucky University of South Carolina
" " Maine " " South Dakota
" " Maryland " " Vermont
" " Michigan " " Virginia
" " Minnesota " " Washington
" " Nebraska " " West Virginia

As scholarships, loans, and part-time jobs are available for needy and worthy students who cannot afford to pay these fees, it is believed that no one need be prevented by the fees from attending the university.

Graduates

Last year and the year before the university made the following awards for work completed:

<table>
<thead>
<tr>
<th>Degree and Certificate</th>
<th>1938-39</th>
<th>1939-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>103</td>
<td>138</td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td>62</td>
<td>92</td>
</tr>
<tr>
<td>Bachelor of Education</td>
<td>148</td>
<td>128</td>
</tr>
<tr>
<td>Master of Arts</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Master of Science</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Master of Education</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Five-Year Diploma in Education</td>
<td>75</td>
<td>74</td>
</tr>
<tr>
<td>Public Health Nursing Certificate</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Commissions in United States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Army Reserve Corps</td>
<td>22</td>
<td>14</td>
</tr>
<tr>
<td>Air Pilot Certificate</td>
<td>none</td>
<td>14</td>
</tr>
</tbody>
</table>

I believe that it may be said truly that the graduates of this university are, on the whole, pretty good citizens. That they are to be
found engaged in a wide variety of professions and vocations and very few of them unemployed attests the effectiveness of their training. It has not seemed practicable to keep complete records of all graduates, but our alumni secretary has an extensive file of information that is very illuminating even though incomplete. From these files the accompanying tables have been compiled, covering a period of ten years to 1938. The following abbreviations referring to occupations have been used:

- Acc’t. Accountants, auditors, and bookkeepers
- Agr. Farmers and ranchers
- A. & N. Army and navy members
- Art Artists and architects
- Cler. Clerks, stenographers, etc.
- Com’l. Commercial workers other than those more specifically listed herein
- Ed. Educators
- Eng. Engineers—all kinds
- Gov’t. Government workers (used only of those whose work falls under no other heading herein)
- Home Housewives
- Indust. Industrial workers (in manufacturing, etc.)
- Law Lawyers and judiciary personnel
- Libr. Librarians
- Lit. Authors, newspapermen, etc.
- Med. Doctors of medicine and dentistry, dental hygienists
- Min. Ministers
- Music Musicians
- Sc. Scientists, researchers, laboratory workers
- Stud. Students
- Welfare Welfare workers

Graduates of College of Applied Science—B.S. Degree Classes 1929-1938 Showing Character of Work They Are Now Doing

<table>
<thead>
<tr>
<th></th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1938</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acc’t.</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agr.</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>A. &amp; N.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Art</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Cler.</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Com’l.</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Ed.</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>10</td>
<td>10</td>
<td>59</td>
</tr>
<tr>
<td>Eng.</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>Gov’t.</td>
<td></td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Indust.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Law</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lit.</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Med.</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>6</td>
<td>13</td>
<td>5</td>
<td>9</td>
<td>6</td>
<td>63</td>
</tr>
<tr>
<td>Sc.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Stud.</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>58</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>58</td>
</tr>
<tr>
<td>Deceased</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>58</td>
</tr>
<tr>
<td>M. Total</td>
<td>39</td>
<td>32</td>
<td>27</td>
<td>34</td>
<td>49</td>
<td>48</td>
<td>55</td>
<td>50</td>
<td>45</td>
<td>44</td>
<td>413</td>
</tr>
</tbody>
</table>
### Graduates of College of Arts and Sciences—B.A. Degree

Classes 1929-1938 Showing Character of Work They Are Now Doing

<table>
<thead>
<tr>
<th></th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1938</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acct'</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Agr.</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. &amp; N.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Art</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Cler.</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>9</td>
<td>16</td>
<td>30</td>
<td>13</td>
<td>9</td>
<td>114</td>
</tr>
<tr>
<td>Com'l.</td>
<td>2</td>
<td>13</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>62</td>
</tr>
<tr>
<td>Ed.</td>
<td>10</td>
<td>21</td>
<td>14</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>83</td>
</tr>
<tr>
<td>Gov't.</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Indust.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Law</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Lit.</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Med.</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Min.</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Sc.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>12</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Stud.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welfare</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Unemployed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
<td>1</td>
<td>8</td>
<td>12</td>
<td>15</td>
<td>9</td>
<td>7</td>
<td>12</td>
<td>13</td>
<td>7</td>
<td>90</td>
</tr>
<tr>
<td>Deceased</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>M. Total</td>
<td>33</td>
<td>55</td>
<td>52</td>
<td>57</td>
<td>52</td>
<td>48</td>
<td>49</td>
<td>70</td>
<td>65</td>
<td>46</td>
<td>527</td>
</tr>
</tbody>
</table>

| **Females** |      |      |      |      |      |      |      |      |      |      |       |
| Acct'       | 1    |      |      |      |      |      |      |      |      |      | 1     |
| Art         |      | 1    | 1    |      |      |      |      |      |      |      | 4     |
| Cler.       | 2    | 3    | 11   | 14   | 5    | 8    | 2    | 6    | 1    | 52    |
| Com'l.      | 1    | 2    |      |      |      |      |      |      |      |      | 3     |
| Ed.         | 13   | 28   | 31   | 32   | 34   | 32   | 12   | 17   | 10   | 5    | 214   |
| Gov't.      |      |      |      |      |      |      |      |      |      |      | 4     |
| Home        | 7    | 12   | 16   | 20   | 16   | 15   | 11   | 7    | 6    | 3    | 113   |
| Libr.       | 1    | 2    | 1    |      | 1    | 3    | 1    |      |      |      | 9     |
| Lit.        | 1    | 1    | 1    | 1    |      |      |      |      |      |      | 4     |
| Med.        | 1    | 1    |      |      |      |      |      |      |      |      | 2     |
| Min.        |      | 1    |      |      |      |      |      |      |      |      | 1     |
| Music       |      | 2    | 1    |      |      |      |      |      |      |      | 4     |
| Nurses      |      | 1    | 1    |      |      |      |      |      |      |      | 3     |
| Sc.         | 1    | 2    | 1    |      | 1    | 1    |      |      |      |      | 7     |
| Stud.       |      | 1    | 3    |      |      | 5    | 7    | 5    | 1    | 5    | 21    |
| Welfare     | 2    | 1    | 2    | 4    | 6    | 2    | 5    | 5    | 4    | 8    | 36    |
| Unknown     | 2    | 2    | 5    | 8    | 11   | 8    | 5    | 7    | 4    | 5    | 57    |
| Deceased    | 1    | 1    | 2    | 1    |      |      |      |      |      |      | 6     |
| F. Total    | 26   | 50   | 62   | 87   | 89   | 68   | 42   | 49   | 39   | 29   | 541   |
| M. & F. Total| 59   | 105  | 114  | 144  | 141  | 116  | 91   | 119  | 104  | 75   | 1068  |
Graduates of Teachers College—Ed. B. Degree
Classes 1932-1938 Showing Character of Work They Are Now Doing

<table>
<thead>
<tr>
<th></th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1938</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acé't.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Cler.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Com'J.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ed.</td>
<td>5</td>
<td>9</td>
<td>17</td>
<td>11.</td>
<td>18</td>
<td>21</td>
<td>20</td>
<td>101</td>
</tr>
<tr>
<td>Eng.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Indust.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Lit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Stud.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Deceased</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>M. Total</td>
<td>7</td>
<td>10</td>
<td>17</td>
<td>17</td>
<td>20</td>
<td>22</td>
<td>21</td>
<td>114</td>
</tr>
</tbody>
</table>

Females

<table>
<thead>
<tr>
<th></th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1938</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cler.</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Com'J.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ed.</td>
<td>18</td>
<td>43</td>
<td>71</td>
<td>66</td>
<td>74</td>
<td>84</td>
<td>123</td>
<td>479</td>
</tr>
<tr>
<td>Home</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>Lit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Med.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Nurses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Stud.</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Welfare</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>19</td>
<td>53</td>
</tr>
<tr>
<td>Deceased</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>F. Total</td>
<td>22</td>
<td>56</td>
<td>80</td>
<td>75</td>
<td>88</td>
<td>96</td>
<td>134</td>
<td>551</td>
</tr>
<tr>
<td>M. &amp; F. Total</td>
<td>29</td>
<td>66</td>
<td>97</td>
<td>92</td>
<td>108</td>
<td>118</td>
<td>155</td>
<td>665</td>
</tr>
</tbody>
</table>

The Graduate Division

All students in the university holding bachelor's degrees, with the exception of fifth-year students in the teachers college, register in the graduate division. These graduate students are of three types: (1) candidates for advanced degrees, (2) candidates for advanced certificates offered by the department of public instruction to teachers in service, (3) other persons with bachelor's degrees who are taking courses for credit but are not working toward advanced degrees or certificates. Ordinarily these three groups are about equal in number.

In offering advanced work, the graduate division does not have a separate faculty of its own, although certain persons are nominally designated as being on the graduate faculty. However, such faculty members are devoting the major portion of their time to undergraduate instruction and offering one, or at the most two, graduate courses, an arrangement which is standard among educational institutions. Because of this utilization of the part-time services of regular faculty members, it is obvious that harmonious relations with the undergraduate colleges are essential to the effective offering of graduate work.

Advanced degrees have been granted by the university since 1914. However, until 1930 the number of advanced degrees awarded annually did not exceed ten. During the past five years the average number awarded has been approximately thirty. Fields in which graduate students have majored follow:
The graduate division offers opportunities for graduate study and research leading to the master's degree in: agriculture, anthropology, bacteriology, botany, chemistry, economics and business, education, English, entomology, geography, geology, history, international relations, nutrition, oriental studies, philosophy, physics, sociology, speech, and zoology. In selecting a field in which advanced degrees may be offered, the graduate committee takes into account the following factors: (1) the number and training of faculty members in that field, (2) the opportunities and facilities for research in that field (library, laboratory equipment, and the local environment), (3) the importance of the field to the life of the islands.

In the sciences basic to tropical agriculture the graduate committee has approved the offering of the doctor of philosophy degree, since, through cooperation with the experiment station of the Hawaiian Sugar Planters' Association, the experiment station of the Pineapple Producers Cooperative Association, the Hawaii Agricultural Experiment Station of the University, and the Bernice P. Bishop Museum, the university's instructional personnel and laboratory equipment are supplemented by the staffs and facilities of these organizations. However, in order to safeguard our standards of graduate work, all candidates for the doctor of philosophy degree are required to complete at least one year of graduate work at another recognized institution.

The graduate committee is strongly of the belief that graduate work is one of the essential functions of the university. Not only does it give to from 300 to 400 students annually an opportunity for professional and cultural improvement, usually as part of a program of work toward an advanced degree or teaching certificate, but it results in much worth-while research by these advanced students on problems of importance to Hawaii.

Perhaps of equal value is the relationship of the faculty members to graduate work. It is generally recognized that professors who offer elementary courses only are likely to get into a rut. The offering of advanced work requires them to keep abreast with developments in their respective fields. Likewise, the direction of student research helps to keep alive the faculty member's interest in his own research investigations.

Oriental Institute

As one would expect, war developments throughout the world have affected very considerably the program of our Oriental Institute. While the need for its services is intensified by war conditions, it is a regrettable paradox that the popular inclination to give it moral and material support diminishes notably in such times as the present.

In the university year just ended, it became increasingly clear to us that we would not be able, during present disturbed conditions, to
move forward in the development of our Oriental Institute program as rapidly and on as broad a front as we did in its first few years, and that some reorganization of our plans would have to be effected. I believe, however, that the importance of the service which this Institute can ultimately perform is so great that we ought to keep it alive and functioning, notwithstanding difficulties which are now besetting us.

One of the important and valuable functions of the institute in its first years was the fostering of undergraduate courses of study in oriental languages, history, philosophy, art, etc. As these courses are now well established and obviously entitled to equal standing with other undergraduate courses, they have been incorporated into the college of arts and sciences curriculum, with no material or significant reduction.

During its first years the institute was active in developing a graduate curriculum designed to be adequate ultimately for the educating of orientalists who would be available for teaching in American schools and colleges, for government service, for foreign service of American corporations, and for research work—all this aimed at bringing about good relations between Orient and Occident. Our record of achievement thus far in this respect is definitely creditable. We have brought some notable and able teachers to the university and made them available to our graduate students. We have enlarged our library resources for this purpose very considerably. While it was not expected that in the first few years there would be a large enrollment of graduate students, there has been a reasonably good response and some of the students enrolled are undoubtedly of more than average ability.

As this was a trial period, to ascertain what could be done at the graduate level, we kept the institute courses somewhat separate from the main graduate curriculum, and depended largely on private sources for our financial support; incidentally, I may say that we have had a gratifying response from friends both in Hawaii and elsewhere to our appeals for aid, some $70,000 having been given to us over a period of five years to supplement other university funds. Now, in the face of present difficulties, we have decided that the trial period can be terminated and the institute courses can become a part of the university's regular graduate curriculum. This has been effected, with an oriental studies field created in the graduate school, so that one can major in that field and thus attain the objectives sought in the institute curriculum. For a really adequate development of this program, however, we shall have to continue to appeal to friends for financial aid, for it is not likely that from regular university funds we shall be able to do as much as ought to be done, in the long run. For the immediate present, it is our intention to hold this graduate curriculum approximately at the 1939-40 level, until the means can be found for expanding it.

The Oriental Institute is pushing forward as effectively as its resources will permit in a program of research, translation, and publication. It is building up as rapidly as possible our library resources in Orientalia and related subjects. It is doing all that it can to help in maintaining an adequate program of instruction in the field of oriental studies, not only at the graduate level but undergraduate as well, through the graduate division and the college of arts and sciences.
We need the moral support of many friends who believe, with us, that there is a real need for the kind of service which we are undertaking to develop in the Oriental Institute, no matter what may come out of present tensions and conflicts in the Pacific area. We hope that all who may be in position to help us financially will see in this an investment opportunity of great importance to the future welfare of our nation and of neighboring nations across the Pacific.

The Castle Kindergarten

Plans are well advanced for the new preschool teacher training center that is to be established at this university under a grant of $300,000 from the Henry M. and Dorothy Castle Foundation. Our first move was to set up a committee representing the university faculty, the Castle Kindergarten and the Castle Foundation trustees, to study the entire situation and lay out preliminary plans. Work on the plans for the new building was begun by Mark Potter, the architect selected by the board of regents, with cooperation from the general committee. In the course of this committee's work of developing plans for the project, it became apparent that the advice and counsel of an expert would be valuable, perhaps essential, and after consideration of several an invitation was extended to Dr. Edna N. White, director of the Merrill-Palmer School in Detroit, to spend a few weeks with us on the problem. I am pleased to be able to report to the board that Dr. White's study and subsequent report have been of very great value to us in the shaping of plans for the program. We feel that the investment of $1500 made for us in this study by the Castle Foundation trustees will be amply repaid in added effectiveness of service by the new department after it gets under way. It is expected that the building will be completed by June or July of 1941, and that the program of preschool teacher training will begin in September, 1941.

Adult Education

Though not adequately developed, adult education is by no means overlooked in our total educational program. We are offering courses of study on a wide range of topics, some of the courses following the general pattern of our regular university offerings, while others are of a specialized nature and carry no academic credits. The program is self-supporting.

Lecturers whom the university invited to its platform during the year included Carl Van Doren, noted literary critic and Pulitzer prize winner; Capt. George T. Plummer; Dr. John W. Withers of New York University; and Dr. Frederick P. Robinson, formerly president of the College of the City of New York. A number (some 52) of our faculty members gave 262 lectures, some before clubs and organizations and some on the university platform.

A study has been made recently to ascertain the public reaction to our lecture programs and to obtain ideas and suggestions for improvement. The study took the form of a questionnaire sent to several
hundred representative citizens. The responses are being carefully studied while plans for the future are being prepared.

**Agricultural Research and Extension Service**

Your attention is directed to the summaries (in a later section of this report) of the important work being carried on by our Hawaii Agriculture Experiment Station and our Cooperative Extension Service in Agriculture and Home Economics, both of which are territory-wide in their scope. Together they take up about 30 per cent of our total annual budget and are responsible, directly and indirectly, for economic gains in the territory which are worth many times the cost. Both are of particular value in the present period when agricultural diversification and other fundamental changes in our economic structure are taking place.

A disproportionately large part of the expense of these two services is borne by the federal government. This is especially true of the Extension Service, for more than 75 per cent of the cost of this is paid from federal funds. This is very much out of line with the situation in the mainland states, where usually 30 to 40 per cent of the support is federal. A review of expenditures in this service during the past several years is illuminating:

**Extension Service in Agriculture and Home Economics, Territory of Hawaii**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expended</th>
<th>Federal Funds</th>
<th>Per cent of Total</th>
<th>Territorial Funds</th>
<th>Per cent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935-36</td>
<td>$119,393.13</td>
<td>$95,163.78</td>
<td>80</td>
<td>$24,229.35</td>
<td>20</td>
</tr>
<tr>
<td>1936-37</td>
<td>137,381.47</td>
<td>113,152.12</td>
<td>82</td>
<td>24,229.35</td>
<td>18</td>
</tr>
<tr>
<td>1937-38</td>
<td>150,957.04</td>
<td>118,598.21</td>
<td>79</td>
<td>32,358.83</td>
<td>21</td>
</tr>
<tr>
<td>1938-39</td>
<td>165,152.53</td>
<td>122,532.86</td>
<td>74</td>
<td>42,619.67</td>
<td>26</td>
</tr>
<tr>
<td>1939-40</td>
<td>150,734.17</td>
<td>125,728.49</td>
<td>79</td>
<td>34,005.68</td>
<td>21</td>
</tr>
</tbody>
</table>

Since the service needs to be enlarged and no additional federal funds are obtainable, it is hoped that territorial appropriations for this purpose may be increased by the 1941 legislature, thereby automatically correcting the matter of cost distribution and putting the service in position to become of maximum usefulness to the islands.

Similarly, the Hawaii Experiment Station needs larger appropriations if it is to be able to serve the territory adequately. A summary of expenditures for this research service in the past several years follows:

**Hawaii Experiment Station**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expended</th>
<th>Federal Funds</th>
<th>Per cent of Total</th>
<th>Territorial Funds</th>
<th>Per cent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935-36</td>
<td>$ 66,598.53</td>
<td>$32,296.60</td>
<td>48</td>
<td>$34,301.93</td>
<td>52</td>
</tr>
<tr>
<td>1936-37</td>
<td>104,233.42</td>
<td>54,593.20</td>
<td>53</td>
<td>49,640.22</td>
<td>47</td>
</tr>
<tr>
<td>1937-38</td>
<td>112,704.77</td>
<td>56,889.80</td>
<td>51</td>
<td>55,814.97</td>
<td>49</td>
</tr>
<tr>
<td>1938-39</td>
<td>172,983.66</td>
<td>63,038.10</td>
<td>36</td>
<td>109,945.56</td>
<td>64</td>
</tr>
<tr>
<td>1939-40</td>
<td>174,237.20</td>
<td>69,186.40</td>
<td>40</td>
<td>105,050.80</td>
<td>60</td>
</tr>
</tbody>
</table>

*Including plant improvements.
Honolulu Aquarium

As you are aware, Mr. Frederick Potter, superintendent of the aquarium for many years, retired from service in June, 1940. His place has been filled temporarily by the appointment of Mr. Spencer Tinker, borrowed for the purpose from our teachers college staff.

It is expected that the board will desire to give further attention this year to the question as to whether the university should continue to manage the aquarium as required by an act of the 1919 legislature. As previously reported, income from admission fees is not sufficient to cover the costs of operation, with the result that each year we have had to draw from general funds of the university to balance the account. In 1939-40 the amount so drawn was $1,599.76. This year it will probably be less, for the budget of expense has been reduced.

This aquarium, though small in comparison with some aquaria of the world, is an important community asset and ought to be maintained at a better level than we can now afford. The building is old and termite-riddled, and the equipment is becoming somewhat obsolete. A new plant ought to be provided, but probably the community would desire to discuss thoroughly the question of selecting the most suitable site for it. Until a new building is erected, however, the present structure ought to be kept in better repair than the narrow limits of our funds have enabled us to keep it. This would require an appropriation from the legislature of an amount from $10,000 to $25,000, depending on the extent to which it would seem desirable to go in rehabilitating the present building, which in turn would depend on how long it would probably be until a new structure is erected.

As for management, there is no particular reason why the university rather than the parks board should carry the responsibility, except that the university has a marine biological laboratory adjacent to the aquarium, and one can see many interesting possibilities in operating the two under one management.

However the question of management may be disposed of, it seems to me very desirable that the policy of charging an admission fee be discontinued. The public expense involved in this change would be small, for the income from fees is usually less than $5000 per year.

Summarizing the situation, I would recommend that the board suggest to the 1941 legislature that, if a new aquarium can be built, it be erected on a new site and be placed under the management of the parks board, the present property to be left with the university for the further development of the marine biological laboratory. If, on the other hand, a new aquarium is not to be built in the near future, I think that it should be our recommendation to the legislature that no change in the management be made for the present, unless it can be effected without detriment to our marine laboratory, which is on aquarium property. This laboratory is an important adjunct of our zoology department and should not be disturbed.

In any case, it is recommended that the 1941 legislature be urged to provide for the operation of the aquarium without dependence on income from admission fees, so that the public could be admitted without charge.
The University Library

During the fiscal year the university library added 8257 bound volumes of general character to its collection, withdrew from circulation 398 such volumes, and had at the end of the period 111,748.

It added 228 bound volumes of governmental origin, withdrew 21, and ended the year with 19,838.

Thus bound volumes, both those governmental in origin and those of a general character, totalled 131,586 on June 30.

The library added 22,165 pamphlets to its shelves during the year. Of these, 16,578 were of general character and 5587 of governmental origin. It withdrew from circulation during the year 7039 pamphlets of all kinds, leaving a net total at the end of the period of 336,956.

Book circulation during the year totalled 100,596, compared with 101,972 in the preceding year. Estimated reserve circulation was 205,878, which brings the total 1939-40 circulation to approximately 306,474.

Circulation of phonograph records totalled 8748; of pictures and maps, 128.

Bound books received as gifts numbered 4597; unbound 2538.

The library transferred 646 bound volumes and 988 unbound volumes to other institutions.

Our Financial Position*

Curtailed legislative appropriations have necessitated a year of retrenchment. Total current income (excluding that of self-supporting auxiliary enterprises) was less than in the preceding year by $23,000. Excess of current income over current expenditures was $6300, and transfer of unrestricted money to plant funds was only $4764, as compared with $126,673 in 1938-39. General current funds (unrestricted) as of June 30, 1940 were the lowest since 1928-29, when the university was a comparatively small institution.

The various services performed by the university last year required the expenditures that may be summarized as follows:

\[
\begin{align*}
\text{For instructional service} & \quad $492,215.69 \\
\text{For adult education} & \quad 17,147.08 \\
\text{For Hawaii Experiment Station} & \quad 171,178.10 \\
\text{For Agricultural Extension Service} & \quad 159,734.17 \\
\text{For Psychological Clinic} & \quad 21,394.98 \\
\text{For library} & \quad 49,403.41 \\
\text{For operation and maintenance of plant} & \quad 53,887.77 \\
\text{For administration and general expense} & \quad 92,743.66 \\
\text{For scholarships, prizes, etc.} & \quad 5,031.00 \\
\end{align*}
\]

\[
\text{For self-supporting auxiliary activities} \quad 153,406.90
\]

\[
\text{Total} \quad $1,062,735.86
\]

* A detailed financial statement is available in mimeographed form to those who request it.
Omitting the item of self-supporting auxiliary activities (cafeteria, bookstore, etc.), we find that something over 60 per cent of the total expense is for instructional functions and nearly 40 per cent for non-instructional functions (agricultural research and extension service and psychological clinic service).

The self-supporting auxiliary activities, carried on chiefly for the benefit of students, represented no expense to the taxpayers, for the cost, $153,406.90 was wholly covered by income derived directly from the activities.

Viewing the matter from the standpoint of the taxpayer, it may be said that:

1. Territorial appropriations to the university were equivalent approximately to 40 per cent of costs in the instructional category, plus 45 per cent in the noninstructional categories, and nothing in the auxiliary activities;
2. Federal appropriations covered about 13 per cent of costs in the instructional category, plus 46 per cent in the noninstructional categories, and nothing in the auxiliary activities;
3. Income from student fees was sufficient to cover about 45 per cent of their instructional costs; students paid all the costs of the auxiliary enterprises which are run for their benefit;
4. Miscellaneous income (including gifts) covered the small balance of expense.

**Needs for the Future**

Herewith is a statement of needs of the University of Hawaii for its future development, based on the assumption that the people of the territory want an institution able to render adequate service along several lines. The needs are presented in categories, as follows:

I. Undergraduate Instruction

The program of undergraduate instruction is nearly adequate for the present needs of the territory, but should be extended somewhat in a few fields:

1. *Agriculture*—A recent survey by a large committee of industrialists and farmers appointed by the regents points to a need for more instruction of our youth in handling farm machinery and in coping with diseases of farm animals.
2. *Economics*—The present curriculum should be expanded to include more and better courses in labor-management relations, and in agricultural economics. Instruction in both of these subjects should be combined with some research, as pointed out below.
3. *Political Science*—There is need for the addition of more courses of study preparatory for government service, especially in the field of police administration.
4. *English and the Arts*—In English literature, music, and the fine arts the curriculum should be gradually expanded and enriched, for
this is essential to the good life of the territory, and thus far, by sheer economic necessity, we have given a disproportionately small share of attention to it.

II. Instruction at Graduate Level

1. The chief immediate need for more instruction at the graduate level is in the field of social work training. Our present curriculum should be expanded sufficiently to meet the needs of the territory for social service workers, the cost of which will be $10,000 per biennium above present expenditures in this field.

2. Looking further into the future, perhaps eight years hence, when the crest of the wave of undergraduate enrollment increases has passed, we should make a general expansion in our graduate division, for a strong graduate school exerts a very beneficial influence on the entire university. It seems to me to be inevitable that such a development will take place, but it probably can be deferred for a few years without harm.

III. Adult Education

Thus far we have developed adult education primarily on a vocational basis, but there is need for much more in other fields. How much of this should be done by the university and how much by public libraries, public schools, and other agencies is not clear, but there is need for something large, though not necessarily expensive, to be done for the adult part of our population by all these agencies working together.

IV. Research

Present needs of the territory require that our research program be broadened and enlarged. For the advancement of diversified agriculture our Hawaii Experiment Station needs some staff additions and some enlargements in its physical plant. Instead of an annual budget of $175,000, it should have at least $225,000, or perhaps $250,000.

In the field of economics and government there are problems in the territory in the solution of which the university should be giving more assistance than now is possible. A good man in agricultural economics and another in industrial and labor relations added to the university staff would be able to do valuable research work and at the same time teach some classes. Likewise, there would be room for a man able to handle finance problems. Anywhere from $10,000 to $40,000 per biennium could well be invested in these additions.

The fisheries industry has some problems in which university research ought to be available but is not, because of lack of personnel. The United States bureau of fisheries has recommended to federal authorities that congress appropriate $50,000 per year and the territorial legislature $10,000 per year for research and other practical service in building up the fishery industry in Hawaii.
Other fields in which research should be pushed, although they may lack some of the practical appeal offered by the three fields mentioned, are volcanology, orientology (Chinese and Japanese peoples and their cultures), and Hawaiian history and geography.

V. Agricultural Extension Service

This important and valuable service is supported mainly by federal funds. It should be enlarged somewhat to make it of maximum usefulness to the territory. An additional $50,000 per biennium of territorial money invested in this would yield good returns in better agriculture and better rural living.

VI. Physical Plant Needs

To meet the needs suggested above, as well as to give reasonably good instructional service to the constantly increasing numbers of undergraduate students, the university needs certain additions to its physical plant. The most seriously pressing of these needs are the following:

1. Chemistry Laboratory—Gartley Hall is very inadequate even for present purposes and is becoming more so as our student enrollments increase. Chemistry is so basically important to the economic life of Hawaii that the best possible facilities should be provided for those who are being trained for service in this field. We believe that a new laboratory building should be erected for chemistry, costing probably $200,000, with Gartley Hall then to be used for physics and other related work.

2. R.O.T.C. Armory—The present building is too small and of such construction that U. S. Army authorities consider it very unsafe as a storage place for guns and ammunition. A more adequate building should be provided soon, at a cost probably of about $40,000.

3. Auditorium—With a student enrollment of over 2000 we have an auditorium capable of seating less than 500. The gymnasium is not satisfactory for auditorium purposes, but is used when necessary, even though it disrupts seriously the normal use for physical education. Very definitely there is need for an auditorium on this campus large enough not only for our student body, but for community purposes as well. No estimate of cost is offered here, as the figure will depend on the size and type of building.

4. Other needs of less immediate importance are:

- gymnasium for women
- library addition
- fine arts building
- remodeling of Hawaii Hall for administration
- engineering laboratories
- Oriental Institute building
- athletic quarters on new field
- new locker rooms at swimming tank
- Hemenway Hall addition
- carpenter shop
- dormitories
After the Crest, What?

After the crest of the wave of increasing numbers of high school graduates passes by, perhaps in 1947 or 1948, we do not anticipate declining enrollments in the university, for in this period of increasing undergraduate pressure we are admitting a smaller percentage of each year’s crop of high school graduates than we would if the pressure were less. In other words, after the pressure abates, the percentage of admissions will probably increase gradually, so that the enrollment totals may show little or no decrease. Also, the suggested increase of attention to be given to graduate work after that point will be an equalizing factor. A physical plant that is planned to be adequate for the 1940s will not, therefore, be too large for the 1950s.

Hawaii has been generous in support of its university in spite of rapidly increasing costs. We are nearly at the end of the period of rapid increase, and it is to be hoped that the same spirit of generosity will continue, for the university seems to be a good investment.

Appreciation to Colleagues

It is a pleasure to acknowledge with appreciation the cordial and loyal cooperation of all members of the university staff. We have achieved some progress during the year covered by this report, and I am sure that it is due to this spirit of cooperation.

Respectfully submitted,

D. L. Crawford
President.
The Psychological and Psychopathic Clinic
By S. D. Porteus, Director

Last March the clinic suffered a great loss through the sudden death of the assistant director, Dr. Mary Hunter. In her three years' connection with the university, Dr. Hunter built up steadily an excellent relationship, not only with parents and teachers but with every social agency in Honolulu. She served for two years as secretary of the territorial conference of social workers and her firsthand acquaintance with their problems and previous training in their field gave them confidence in her, both as a psychologist and colleague. In her own work she was unspiring in interest and effort, and her insight into difficult clinical problems was excellent. An increasingly large number of very young children were being referred to her for study and advice, and her usefulness and value in the community were being fully recognized. Finding a successor to Dr. Hunter is going to be an extremely difficult task.

A new feature of the work for this year has been the extension of the inter-island service of the clinic. It has always been our custom to make visits to the other islands, but the time allotted was necessarily limited and far less than the demand. The comparative isolation of school principals, probation officers, and others in social work has brought about not only a decided appreciation of any psychological service but an insistent demand for more help. This demand was not properly met by short, infrequent visits of the psychologist. Recognizing this fact, we determined to give more adequate service by allotting a travelling psychologist to inter-island work. Accordingly, Dr. Eleanor Palmer was appointed last September. She spent two and one-half months on each of the islands of Kauai and Maui and is at present resident on Hawaii. The response to this plan has been excellent, the only drawback being that it has succeeded so well that still more help is being requested. Schools and courts and social agencies have cooperated excellently in this work. Travel is, of course, expensive, and, if this plan is to become permanent, additional support may be required from the legislature. The case for a small increase in appropriations for this purpose can, however, be put very convincingly, as the advantages of the territory-wide functions of the clinic are obvious. From all reports Dr. Palmer's work is making an excellent impression, these reports having come from supervising principals, social workers, and others.

Another department of our work that is developing satisfactorily is vocational guidance. As this deals very largely with students, it makes another link of close association with the university. Dr. Herrick is in charge of this division, and the number of examinations and consultations is increasing steadily.

Dr. Honzik's work at the prison and with delinquent boys and girls marks another important community service that is highly appreciated. Since the new department of institutions was created the psychological work in connection with the two industrial schools has been systematized.

The volume of psychological work has by no means diminished. It continues to be associated with the programs of every social agency in the territory.
The total number of cases examined, the chief referring divisions, and comparisons with the preceding fiscal year follow:

<table>
<thead>
<tr>
<th>Referring agencies</th>
<th>Number examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Courts and correctional institutions</td>
<td>451 569</td>
</tr>
<tr>
<td>2. Schools and educational institutions</td>
<td>404 453</td>
</tr>
<tr>
<td>3. Social welfare agencies</td>
<td>239 275</td>
</tr>
<tr>
<td>4. Private individuals and self-referrals</td>
<td>217 134</td>
</tr>
<tr>
<td>5. Health organizations, etc</td>
<td>119 80</td>
</tr>
<tr>
<td>6. Miscellaneous</td>
<td>63 57</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>1493 1568</strong></td>
</tr>
</tbody>
</table>

Research work on racial differences has been going on during the past year mainly in the direction of a statistical analysis of work already completed and only partially reported. In a Dutch encyclopedia publication, *Tabulae Biologicae*, a summary of 22 investigations was included at the request of the editor. This summary will form the basis of a more extensive discussion of the whole subject of racial differences.

A textbook, *The Practice of Clinical Psychology*, which is to form one of the American Psychology Series, has been completed and is in process of publication by the American Book Company. It will form the basis of courses in clinical psychology not only here but in mainland universities. It is founded directly on thirty years' experience in its field and will, I trust, be recognized as authoritative. It should add to the national and international standing of this clinic, which is already high.

On a forthcoming visit to the mainland the director will endeavor to select a capable psychologist to fill Dr. Hunter's place.

Among my special recommendations for the coming year is one to provide more extended clerical assistance under a duly appointed secretary and office manager. If this appointment is made, it is proposed to postpone for the present the nomination of an assistant director.
The Agricultural Extension Service

By H. H. Warner, Director

Our Agricultural Extension Service is conducted on a cooperative basis by the United States department of agriculture and the University of Hawaii, with the purpose of rendering service to rural people, and by means of practical demonstrations to obtain the adoption of improved farm and home practices which lead to greater satisfaction in rural living.

No organization in Hawaii is in closer daily contact with the producers of food crops and their families than is the Agricultural Extension Service. It maintains an organization of thirty-one farm and home advisers or county agents and assistants operating from nine branch offices placed strategically to serve the entire territory. An improvement in coverage was made during the year by dividing the single county office formerly serving the entire island of Oahu into three new offices located at Wahiawa and Kaneohe, in addition to the Honolulu office, which has been moved from the federal building to the university campus. Workers living and working in these farm communities were able to accomplish better results with less time devoted to travel.

There are three offices on the island of Hawaii—at Hilo, Kohala, and Kealakekua. There is an office at Lihue on Kauai, one at Wailuku on Maui, and one at Kaunakakai on Molokai. The staff in these offices consists of an agricultural extension agent and a home demonstration agent, with their assistants and a stenographer.

At the headquarters of the Agricultural Extension Service in the Agriculture building on the university campus are fifteen technical workers and eleven stenographers and clerks. Each of these technical workers is an expert in his own line and by means of frequent trips keeps the county workers informed and trained on subject matter.

The cost of this work in the year ended June 30, 1940, was $159,734.17. Nearly 80 per cent was from federal sources, the balance from territorial appropriations.

The basis of agricultural extension work is demonstration by doing, rather than teaching by theory. This is an especially effective means in Hawaii where many of the older rural people speak English with difficulty.

One of the most effective means of carrying on agricultural extension work is through club organizations, because many more individuals can be reached in this manner than by personal visits. During the past year there were in the territory 151 boys' and men's clubs with 2285 members and 177 girls' and women's clubs with 2467 members. Generally, younger boys and girls who are still attending school comprise the membership of the 4-H clubs, while older individuals no longer attending school compose the university extension clubs. Each club adopted for the year a definite program covering such subjects as home gardens, poultry diseases, swine growing, grading and packing vegetables, production of commercial truck crops, foods and nutrition, control of insects and diseases, clothing, home improvement, etc. During the
past year various agricultural and home-making demonstrations and discussions were conducted before 4046 meetings attended by a total of 62,332 persons.

In each locality where a field office is maintained an advisory council of local men and women assisted in developing the particular program most needed in that community. The advice and counsel of these groups helped the extension service program to meet the needs of the community.

During the year a special effort was made to record the actual results accomplished. The annual summary of these figures shows that 38,786 improved practices were adopted on the farms and in the rural homes as a result of extension demonstration work. These improved practices cover a wide range of activities—the construction of wire-floored poultry houses, the use of fresh fruit each morning for breakfast, the grading and packing of tomatoes, the use of supplemental hog feed, etc. The amazing total surprised the organization's own workers.

Assistant agents, in their regular monthly rounds to estimate truck crop production, made 22,067 separate farm and home calls in the year. The extension agent is the most intimate contact that small farmers and rural people have with any governmental agency.

A necessary and important part of the extension service program is dissemination of printed information. In addition to the regular weekly market letter and the monthly crop estimate, there were published during the past year a monthly extension service letter, seventy-two mimeographed agricultural circulars, and thirty-nine home economics circulars on subjects related to agricultural and home-making projects. In addition, three printed bulletins were published: No. 35, "Protective Foods from Subsistence Gardens"; No. 36, "Agricultural Land-Use Planning in the Territory of Hawaii"; and No. 37, "Fertilizers. Their Purpose, Nature, Purchase, and Use." After careful circularization there remained 1640 names on the extension service mailing list to receive one or more of these publications.

Radio scripts were prepared three times a month for broadcast over KGU, and occasional programs were prepared for other stations in the islands. Press releases totalling 250 were issued on subjects of current interest having to do with the work of the organization.

The subject matter program is divided into nine projects, each of which made definite progress during the year.

Agricultural Economics

The outstanding accomplishment in the agricultural economics program was the organization on Maui of several cooperative associations of tomato growers. These growers adopted the grading and packing practices recommended, and, for the first time in the history of the territory, local growers supplied all of the tomatoes consumed during the winter months, supplanting receipts from the mainland in the former years. Improvements were made in grading and packing of fresh papayas for shipments to coast markets, and some trial shipments of bell peppers, summer squash, cucumbers, and other items were undertaken.

The weekly market letter continued to give producers reliable information on the basis of which many growers regulated their shipments to Honolulu. Furthermore, many growers learned how to use the information contained in the monthly crop estimate and regulated their plantings accordingly. There were 625 individuals on the mailing list for the monthly crop estimate.
Animal Husbandry

Increased interest was shown in the dairy herd improvement program, which enables dairymen to cull out their least profitable animals. Fifteen dairies cooperated in this plan to record each month the cost of feed per pound of butter fat produced for each animal.

The hog litter contest stimulated interest in scientific feeding as a source of increased profits for hog growers. Entered in the contest were 138 individuals, some in every county in the territory.

The improvement of pastures through the introduction and establishment of better forage grasses for cattle ranches was an important part of this project.

Truck Crops

The production of truck crops for island consumption continued to occupy the attention of most of the territory's small farmers. The presence of the navy and the influx of many mainland civilian workers on defense projects created a strong demand for these island-grown commodities. Better control of diseases and insect pests was noticed. Particular attention was devoted to correct fertilizer placement and the use of disease-resistant seeds. Much assistance was rendered plantation managements in their programs to encourage the home production of vegetables and the proper way to use them.

Soil Conservation Service

Emphasis was placed upon the educational features of the national soil conservation program and a large number of demonstrations carried on to show farmers how to prevent damage by erosion. Assistance was rendered the federal soil conservation service in laying out similar projects on pineapple fields, where planting was conducted on contour lines.

Poultry

More poultrymen throughout the territory adopted improved practices during the year. Special emphasis was placed upon better housing, methods of disease control, and proper feeding. Small poultrymen, especially, appreciated the demonstration of ways to handle eggs to reduce the deterioration between the producer and the consumer.

Home Economics

Again this year, the chief emphasis in the home economics service was placed on the demonstrations in food and nutrition. During the year 1195 demonstrations were conducted on this subject and 1003 families adopted better diets. Many clubs of young women on plantations were encouraged not only to produce but to properly prepare and regularly consume more protective foods. The steady growth in the use of better balanced diets for rural people was a measure of accomplishment in this project.

Home Management

The installation of simple kitchen conveniences and the making of simple home furniture occupied the attention of most of the clubs in the home manage-
ment project. The long-time results are making for greater contentment in rural living.

Clothing

Economy was the watchword of the clothing phase of home economics during the year. Eighty-six clubs of girls and young women learned how to effect savings by making clothing at home. A surprising amount of interest was developed; 721 demonstrations on this subject were presented before the various clothing clubs.

Farm Forestry

During the year a new project on farm forestry was initiated with funds supplied by the federal department of agriculture and matched by appropriations from the Hawaiian homes commission. The work was begun in the latter half of the year on Molokai, and it consisted of planting windbreaks to prevent soil erosion and to improve living conditions in the Hoolehua homesteads.

The local operations of the Farm Security Administration were divorced from the extension service officially in April, but extension continued to serve that federal agency in an educational capacity. Assistance was rendered the Farm Security clients in planning their programs and in carrying out their work under rural rehabilitation as well as tenant purchase loans.

A number of conferences were held with the territorial planning board and its committee on land utilization, and from time to time special surveys on the food situation were made at the request of the department service command of the United States army.

The usual cooperation was extended to the territorial board of health, the United States Farm Credit Administration, the Agricultural Adjustment Administration, the Hawaii Agricultural Experiment Station, the diversified crops committee of the Hawaiian Sugar Planters' Association, and other agencies interested in developing agriculture in the territory. While not spectacular in nature, results for the year gave further proof of the value of the continuous work of the Agricultural Extension Service in furthering the food production program throughout the islands and in demonstrating to farmers up-to-date methods of operation.
Today national and international events directly influence the social and agricultural economy of the territory. Emergency subsistence, as a factor in the defense program, has unquestionably led to greater consideration of agricultural diversification. Expansion of local markets, largely through increased army and navy personnel and expenditures, has stimulated interest in production of beef, milk, eggs, and truck and fruit crops. Modifications of quarantine regulations permitting shipment to the mainland of previously barred fruits and vegetables will not only protect the local market from surpluses but also stimulate commercial production. Planted acreages and quantitative production of diversified crops are bound to increase.

These developments have brought into sharp focus much of the work of the Hawaii Agricultural Experiment Station, particularly on projects dealing directly and indirectly with food production. Plantings of improved pasture and soilage grasses; range-management studies; pen-fattening of beef with plantation by-products and protein supplements; swine and poultry feeding trials; development of successful sterilization methods for fruits and vegetables; winter production of white potatoes, tomatoes, peppers, and other truck crops; the growing of papayas for local markets, shipping, and canning; mango and macadamia investigations; and many other phases of research—all emphasize the relationship between the activities of the experiment station and agricultural expansion during the past few years.

The Hawaii Experiment Station receives close cooperation from the experiment stations of the Hawaiian Sugar Planters' Association and the Pineapple Producers Cooperative Association. Working agreements in soil chemistry with the H.S.P.A. experiment station have led to a pooling of effort in some tasks and a segregation of responsibility in others. Complete confidence and greater efficiency have resulted in otherwise impossible accomplishments. Cooperative work on plant physiology has demonstrated the possible applications of scientific research to practical crop production. Yeast produced from cane molasses by the H.S.P.A. experiment station is being tested for protein value in poultry and hog feeding trials; its vitamin value in human nutrition has also been determined. The pathologists, entomologists, physiologists, horticulturists, agronomists, and others of these stations have found many occasions to cooperate on various problems in their respective fields.

A soil research grant from E. I. du Pont de Nemours, received during the year, has been renewed for a second year.

The local chamber of commerce health committee appropriated $24,000 for research, over a two-year period, in human parasitology, typhus, and infectious jaundice, and appointed Dr. J. E. Alicata director of the research laboratory. Dr. Alicata will also continue his investigations in animal parasitology at the experiment station, when he returns from sabbatical leave in January, 1941.

Members of the staff representing the station on the land planning and the new crops committees of the Territorial Planning Board have contributed
materially to the accomplishments of these groups. Station workers also serve on committees of the regional soil salinity laboratory, soil conservation service, Oahu health council, the Honolulu chamber of commerce, and other organizations.

The facilities of the experiment station are greatly expanded through co-operation from sugar and pineapple plantations, ranches, and individuals. Beef feeding trials at Kapapala Ranch and Waianae Company and the more recent work at Moanalua Dairy are examples of the active interest in problems relating to both livestock and sugar. Cooperative investigations on adaptability of forage crops, selections of macadamia and papaya varieties, culture of truck crops, and control of diseases and insects of specific crops, are further evidence of interest in problems confronting the experiment station. These investigations could not be attempted—or only on a limited scale—without land and other facilities furnished by the cooperators. However, the experiment station is in great need of suitable acreages of land for various experiments of more detailed character than are possible through cooperative arrangements.

The new wing of the Agriculture building, completed late in June of 1939, has been equipped. It provides laboratory facilities and office space for work in soil chemistry and physics, plant physiology, nutrition, plant pathology, and fruit and truck crops. A 40-foot-long addition to the greenhouse improves facilities for research in soils, plant physiology, entomology, and plant pathology. The acquisition of tractors and cultivation implements will contribute materially to the efficiency of operation of the three experimental farms on Oahu.

The experimental farms on Maui and Hawaii undergo continual development and are becoming more and more an integral part of the research program of the station. The work of the branch station on Maui is especially outstanding. This station, because of its location and climate, has become the seat of much of the experimental work on grasses and pasture management.

We present, in the following paragraphs, brief statements of some of the more significant accomplishments of the staff which have practical applications to the agricultural industries of the territory:

Soils Chemistry and Physics

Greater quantities of available nitrogen (nitrates and ammonia) are released in soils alternately wetted and dried than in soils maintained in a moist condition. Determinations of available nitrogen are being extended to field experimental plots because of the important interrelationships between fertilization with this element and irrigation and crop growth.

When ammonia and potash salt are applied to Hawaiian soils in irrigation waters at low concentrations, there is no retention of these salts by the soil.

Inositol, a phosphorus compound, has been isolated from the organic fraction of the soil phosphorus. This is the first time that a definite phosphorus compound has been isolated from a local soil.

A survey of Hawaiian soils with respect to the minor elements, now in progress, is of particular interest because of the manner of origin of the soils. Soils from only a few locations are low in boron.

Agronomy

Large perennial forage grasses such as Napier are ideally adapted to Hawaiian conditions and often yield 100 tons of green forage per acre. The
management of such grasses in quick rotation, when supplemented with molasses and protein for beef fattening, is meeting with success.

The potentialities of forage species now growing in Hawaii are largely unexplored. Many are extremely variable, and selected varieties should be adapted to specific growing conditions and uses. Prominent among these species are Guinea, Sudan, and Napier grasses.

Progress has been made in improving the pericarp character of self-pollinated U.S.D.A.-34 sweet corn. Further improvement may add another to the expanding list of diversified crops.

Greenhouse and field tests are determining the effect of climate and soil on distribution of pasture legumes, particularly at elevations between 2000 and 4000 feet. The need of fertilization with lime and phosphates is evident with certain soil types in this important pasture zone. Improvement of range areas will add materially to carrying capacity and production of beef in the territory.

The adaptability and palatability of some 300 introduced species and strains of forage plants are being tested at the branch stations. These stations are situated on three islands, in districts representative of large pasture areas.

**Horticulture**

Ethylene chlorohydrin treatments of potatoes show that germination and growth of seed can be greatly accelerated and yields increased. Treatment involves the risk of seed piece rotting, however. Successful application of these findings to seed potatoes from the mainland would have a material influence on the development of the winter potato industry.

Three seasons' plantings show that seed potatoes grown during the winter months in Hawaii and stored at 38 degrees Fahrenheit until the next fall produce as high yields as newly imported seed stocks. These results are highly significant, since winter potatoes must be planted before mainland seed is ready to germinate well, unless especially treated.

Work on the tolerance of papaya and mango to methyl-bromide fumigation has shown that some injury occurs. The injury is comparable in effect to that due to heat sterilization. Methyl bromide also decreases the natural resistance of the fruit to fungus attack.

Papaya, mango, and tomato cannot be stored below 50 degrees Fahrenheit without a "chilling" effect that seriously affects their normal ripening and market quality after storage. The results of these studies are already being applied commercially.

Oil formation and accumulation in the macadamia nut proceed at a uniform and rapid rate from the time the shell hardens until the nut is mature, a fact of significance from the standpoint of quality as well as cultural practices. Harvesting must be delayed until the nuts reach full maturity, and the possibilities of more rapid and economical harvesting are limited.

**Plant Physiology**

Tomato plants in water culture solutions were more sensitive to sodium arsenite than to sodium arsenate. The effects of the arsenite were not modified by increasing or decreasing the phosphate level of the cultures, but those of arsenate increased as phosphate was reduced.
Sodium arsenite was added to a clay soil so that a wide initial range was established. Successive tomato and Sudan grass crops were grown in the soil and showed a decreasing trend in growth up to 2000 parts per million, beyond which no successful growth occurred. After five successive crops, Sudan grass continued to show effects of the residual arsenic in the soil but tomatoes did not.

Various treatments significantly increased seed germination of certain important pasture grass species. Germination of *Paspalum prolifatum* was increased from 0.2 to 39 per cent by soaking in tap water for three days; germination of *P. notatum*, from 0.2 to 73 per cent by scarification with concentrated sulfuric acid (C.P.) for 30 to 35 minutes; germination of *Pennisetum setosum*, from 52 to 92 per cent by a 24-hour treatment in a 1 per cent solution of ammonium sulfocyanide; and germination of *P. ciliare*, from 60 to 80 per cent by scarification with sulfuric acid for 10 minutes.

Factors of commercial importance in germination of the sugar cane seed piece may be external or internal. Of the external factors, soil temperature is the most important—68 to 69 degrees Fahrenheit is the minimum temperature and 90 to 95 degrees Fahrenheit is optimum. Soil moisture and oxygen are other important external factors. Important internal factors are the age of the planting material, the number of buds per seed piece, and position of the buds on the planted seed pieces, their composition, and the presence of leaf sheaths.

Field studies under two conditions of light intensity demonstrate the importance of this factor in growth and yield of sugar cane. When soil fertility, moisture, and temperature were approximately equal, the high-light-intensity crop yielded 1.34 tons per acre and the low-light-intensity crop yielded 0.5 tons per acre. Leaf area and number of plants per acre were also correlated with light conditions and with yield.

**Plant Pathology**

Yellow spot of pineapple virus, cause of a serious disease of tomato, has been shown to be very similar in symptom expression, ease of mechanical transmission, and failure of seed transmission to the spotted wilt virus. Evidence points to a belief that the two viruses are identical, but physical properties have not yet been compared.

**Entomology**

Contrary to general belief, the most important pod-damaging insect of string beans is the larva of the Pyralid moth borer, *Maruca testulalis*. The most important foliage-consuming insect is the adult of the Chinese rose beetle, *Adoretus sinicus*.

Tetra methyl thiuram disulfide, apparently acting as a repellent, reduced damage to beans by adult rose beetles and also by the pod borer.

A second survey for parasites to control the cabbage worm showed *Apanteles glomeratus* and *Frontina archipippivora* to be the only parasites of significance operating during the fall and winter months.

A “wilt” disease is responsible for high mortality of cabbage worms, particularly at elevations of less than 1000 feet. The disease apparently affects parasitism by *Apanteles glomeratus*, but well-developed larvae of *Frontina archipippivora* are not affected. The fly parasite, *Frontina*, is also affected less by insecticides than is *Apanteles*. 
Animal Husbandry

Balanced rations containing 40 and 50 per cent cane molasses or equivalent quantities of a pineapple syrup concentrate have been fed with success to swine over 100 pounds initial weight. Even though growth was slow, it was more economic than on a regular grain ration. Gains averaged 1.2 pounds daily and feed utilization about 6 pounds per pound of gain.

Beef cattle in dry lot, for an eight-month period, were fed a ration of fresh-cut green cane tops with free access to molasses and soybean oil cake meal mixed in the proportion of 4 to 1. The steers consumed 12.7 pounds of molasses daily and made average daily gains of 1.4 pounds. Kidney and liver tissue showed no gross evidence of damage due to molasses feeding. Histological studies showed initiation of fatty degeneration but this degeneration was not deemed harmful. These levels of molasses feeding to swine and steers are higher than were previously deemed advisable.

The commercial possibilities of yeast production from cane molasses are being developed by the experiment station of the H.S.P.A. Protein production is of extreme importance in the territory, both as a human food and for livestock. The protein and vitamin values of this yeast are being determined by the university station in cooperation with the H.S.P.A. experiment station.

Necrotic enteritis, the second greatest cause of mortality, decreased and even disappeared, while growth rate increased when swine were fed yeast.

When the dried yeast or the wet yeast sludge replaced ordinary protein supplements in the feed of dairy heifers, the growth rate was satisfactory.

Dairy heifers are now in lactation after two years on a ration in which 60 per cent of the nitrogen was supplied by urea. Reproduction was normal, and the calves are active and well-grown. The one heifer calf born will be fed the urea-ration feed. Measurements of lactation show that milk flow is maintained, and the milk seems normal in every way.

Fat-corrected milk production was significantly higher when the legume Desmanthus virgatus was fed to dairy cows than when Napier grass was fed. The milk-roughage ratio was also smaller when the legume was fed. This is important because protein needs of the territory might be partially filled by this and similar legumes.

Lactating sows fed a low protein ration (10 per cent total protein) produced pigs so much lighter at weaning than did sows fed rations known to be adequate for milk production that savings in protein supplement were apparently not economic.

Poultry

Selection of males and females for breeding from families with known high viability may overcome the most serious poultry problem in the territory, that of high first-year mortality.

A mixture of four pounds of finely-ground pineapple bran and one pound of soybean meal has been used to replace five pounds of ground oats in a standard poultry ration. In this combination the amount of pineapple bran is increased to 15 per cent of the mash mixture.

Higher egg production without significant increase in mortality was obtained in a test on Leghorn birds fed a yeast-fermented mash. A repetition of the test with two thirds of the birds in their second year shows a significantly
larger number of eggs from the yeast-fed lot. There are indications that mortality may be greater among the older birds fed on yeast-fermented mash.

Pineapple syrup replaced corn meal pound-for-pound in amounts up to 15 per cent of a standard poultry ration. Judged by rate of growth, appearance, and viability, the experimental chicks made satisfactory development although their growth rate has not equaled that of chicks on the standard ration. Apparently pineapple syrup can be fed to poultry in larger amounts than cane molasses.

In a preliminary test chicks fed boiled taro, supplemented by a high-protein mash mixture of island products, have made gains only slightly less than those of the check lot fed a standard ration. Thus certain imported grains can be replaced with island-grown carbohydrate feeds.

Effective screening to exclude mosquitoes is necessary to prevent fowl pox until chicks can be vaccinated at seven to eight weeks of age. Promising but inconclusive results from vaccination at hatching time were obtained last year. Repeated tests this year indicate that vaccination in the web of the wing with a needle is more satisfactory than on the leg by the "follicle" method. The importance of using a fine rather than a coarse needle also has been demonstrated. Effective early vaccination and immunity would be a material contribution to poultry raising.

Eggs held from seven to ten days in a cabinet cooled and humidified by a wet burlap curtain were compared with eggs of identical original quality held in an open room. After seven days in the cooler, 70 to 80 per cent of these eggs were graded as Specials or Extras, while only 20 to 50 per cent of the uncooled eggs remained in these grades. Differences were less marked when eggs were held more than seven days. The value of such an inexpensive cooler, particularly to off-island poultrymen who must hold their eggs for several days, is apparent.

Parasitology

A new drug compound developed by the parasitology department, consisting of hexachloroethane and kanuka extract, has been found highly effective in the treatment of cattle for liver flukes.

The number of eggs per gram of feces has been found to correlate with the number of adult flukes found in infected animals at autopsy. Thus it is not only possible to determine the extent of fluke infection, but also to determine the efficacy of a drug treatment by making egg counts before and after treatment.

Nutrition

Sixteen Filipino vegetables have been assayed for vitamins A, B, and C. Some of these vegetables commonly grown and used in Hawaii have proved to be excellent sources of the three important vitamins.

The yeast produced from molasses by the H.S.P.A. experiment station has been shown to contain 5280 micrograms (1760 I.U.) of thiamin per 100 grams, a value comparable to some dried brewers' yeasts and greatly superior to any baker's yeast.

Hawaiian Rose potatoes from three localities have been analyzed for calcium, phosphorus, and iron and the results compared with analyses of new potatoes shipped from the mainland. The Hawaiian-grown potatoes were as good a
source of calcium and iron as the imported potatoes. Hawaiian Rose potatoes were also shown to be twice as high in vitamin C as mainland new potatoes. Preliminary tests of the thiamin content of cooked Hawaiian Rose potatoes show them to be as good a source of this vitamin as potatoes grown elsewhere, judging from reports in the literature.

Macadamia nuts, like peanuts and some other nuts, contain little or no vitamin A but are an excellent source of vitamin B. The raw kernels contain 480 micrograms of thiamin per 100 grams, about 40 per cent of which is lost in roasting. The roasted product on the market contains about 280 micrograms of thiamin (93 I.U.) per 100 grams, a value higher than that reported for roasted peanuts, which are considered an excellent source of vitamin B.

Chemical analyses indicate that macadamia nuts compare favorably with peanuts as a source of calcium and iron and exceed all other nuts in fat content.

The diets of 104 independent farmer families in Hawaii were found to be, on the average, adequate in calories, protein, phosphorus, iron, and vitamin C. Deficiencies, sometimes of a "serious" character, were found in the consumption levels of calcium and of vitamins A and B. All diets, especially those of the Japanese, were found to be exceptionally high in refined cereals. Of the 154 children in 48 families examined by a pediatrist and a dentist during the past year, about one half were found to be in "good" nutritional condition. Incidence of dental caries among school children was very high.

A study of the diets of relief families in Honolulu indicates a real need for education in budgeting the family food dollar.

Publications

Two bulletins, one annual report, three circulars, eighteen technical papers and various miscellaneous articles, radio talks, and publicity items were prepared and published during the year.
Degrees, Diplomas, and Certificates Conferred in 1940†

All of these awards were made in June except those whose recipients' names are starred. The single star signifies that the award was made in February, the double star that it was made in August.

**ACADEMIC DEGREES**

**MASTER OF SCIENCE**

**Albert H. Banner, B.S., University of Washington, 1935. (Zoology.)**
Sadamoto Iwashita, B.S., University of Hawaii, 1939. (Chemistry.)
Peter Hayduro Kim, B.S., University of Hawaii, 1939. (Chemistry.)
Kikuo Kuramoto, B.S., University of Hawaii, 1939. (Chemistry.)
Kong Tong Mau, B.S., University of Hawaii, 1938. (Chemistry.)
John Thomas McHenry, B.S., University of Santa Clara, 1938. (Zoology.)
Manley St. Denis, B.S., Massachusetts Institute of Technology, 1932. (Mathematics.)
Robert Seiso Nekomoto, B.S., University of Hawaii, 1939. (Chemistry.)
*lily Yuriye Utsumi, B.S., University of Hawaii, 1938. (Chemistry.)

**MASTER OF ARTS**

**Laurence P. Dowd, B.B.A., University of Washington, 1938. (Oriental Studies.)**
Richard Gard, B.A., University of Washington, 1937. (Oriental Studies.)
A. William Hire, A.B., Guilford College, 1933. (Psychology.)
Koon-Wai Leung, B.A., Lingnan University, 1938. (Economics.)
Carol Wakefield Orme, B.A., University of Washington, 1922. (Speech.)
Leland Herman Parkhurst, B.A., University of Oregon, 1938. (Geography.)
Edward H. Schaefer, Jr., A.B., University of California, 1938. (Oriental Studies.)
*Patricia McMahon Wallace, B.A., University of Hawaii, 1933. (Sociology.)

**MASTER OF EDUCATION**

*Allen A. Bailey, B.S., University of Oregon, 1928. (Secondary Education.)
**Lela Robinson Brewer, B.A., University of Hawaii, 1931. (Educational Psychology.)
**Robert W. Clopton, A.B., Maryville College, 1926. (Educational Philosophy.)
Charles Franklin Congdon, B.S., State Teachers College (Pennsylvania), 1934. (Commercial Education.)
Ben M. Doty, B.S., Brigham Young University, 1931. (Music Education.)
Clarence Raleigh Ferdun, B.S., Oregon State College, 1931. (Agricultural Education.)
*Carlos Hancey, B.S., Utah State Agricultural College, 1928. (Music Education.)

†Formerly this information appeared in the General Catalogue, which is issued in the spring.
DEGREES CONFERRED IN 1940

Clinton Kanahele, Ed.B., University of Hawaii, 1937. (Educational Sociology.)
Yoshiko Irene Kashiwa, Ed.B., University of Hawaii, 1937. (Educational Sociology.)
Genevieve Lee, B.A., University of Hawaii, 1934. (Kindergarten Education.)
*Edith Ling Louis, B.A., University of Hawaii, 1931. (Elementary Education.)
*Aubrey Newton Price, B.A., University of Redlands, 1928. (Educational Philosophy.)
Albert J. McKinney, Ed.B., University of Hawaii, 1938. (Educational Administration.)
Elsie Ching Motoyama, Ed.B., University of Hawaii, 1938. (Educational Psychology.)
Sumi Watanabe Okawa, Ed.B., University of Hawaii, 1938. (Speech Education.)
J. Alfred Simonson, B.A., Pacific Union College, 1925. (Educational History.)
Ernest Gilbert Villers, B.S., Denison University, 1914. (Educational History.)

BACHELOR OF SCIENCE

IN AGRICULTURE
Raymond Tai Kwong Ah Hoy
Hartwell K. Blake
Jean P. David
Jules Domond
Iwao Walter Furuya
*Ernst Ernest Haenisch
*Hop Hee
Haruo Honma
Teruo Ihsara
John Yasumitsu Iwane
Takehi Kido
Shigeo Kobashigawa
Maurice Kekulaepio Kong
Masatoshi Kiiwata
Frederick Sui Wo Loo
Hideo Makino
Walter Kaohu Mookini
Yukio Nakagawa
Shinya Namiki
Kenneth Otagaki
William B. Rathburn
En Kew Shim
Sadamu Sumida
Shiyou Takumi
Shigeru Tsubota
George Kamekichi Uyehara
Shozun Yamauchi

IN CIVIL ENGINEERING
Francis Aona, Jr. *
Shoichiro James Hara
Leighton Louis
Jacob Yagob Pyo
James Sau Keong Tam
Alfred Jack Quon Wong

IN GENERAL SCIENCE
Dora Chan
Ah Bun Chang
Laura Mew Wah Ching
Duke Cho Choy
**Philip Tong Chu
Donna Miriam Chun
Luther Morris Foster
(Honors in Chemistry)
Yasuyuki Fukushima
Thomas Takeo Harada
David Hyun
Warren Ah Yau Jung
Lester Tetsuro Kashiwa
James Tadao Kawano
Wah Kau Kong
(Honors in Chemistry)
Tamotsu Kubota
Ying Sing Lee
*Rodman Edward Lindow
Duane W. Malone
*Jerome Aldrich Munson
Takayuki Oba
*Daniel Loy Pang
*Kwan Boo Park
Edgar Joe Phillips
Anton Postl
(Honors in Chemistry)
B. Allen Richardson
Richard Sadaji Takasaki
(Honors in Chemistry)
Futoshi Takazawa
Yoshinori Tanada
(Honors in Zoology)
Kenkiichiro Teruya
Hiroshi Watanabe
Mun Charn Wong
*Stanley Shin Tien Wong
Sun On Wong
Kalfred Look Kee Yee
Toyoki Yoshida
IN HOME ECONOMICS
Dorothy Mewha Chang
Mew Ung Chock
Fujie Enomoto
Kimiyo Punamori
Wood Mee Hee
*Marnion Fho Yim
Kikue Kiyabu
*Yet Lan Len
Florence Wai Lan Leon
*Eunice Chew Wan Leong
Pearl Chew Kung Tom Loo

Edith Ruth Muller
Miharu Okawa
Grace Ten Yin Richardson
Janet Sumae Sakai
Matsue Takasawa
Roseline Teruyo Taniguchi

IN SUGAR TECHNOLOGY
Minoru Isobe
Vicente T. Madamba
George Shiel McEldowney
Robert Chase Warren

BACHELOR OF ARTS
Lulu Sau Chun Aiona Loo
Yoshishige Ajimine
Kaoru Akamatsu
Mary Alba Alba
Charence Scott Anderson, Jr.
Chew Ilun Au
Elcie Nyit Lann Au
*Mary Hung Gin Au
Angeles Mangaser Aveilla
Wilma Henrietta Barringen
**Mollie McKinnon Beebe
*Tadao Beppu
Edward Louis Bingham
Chumney Wells Brownell, III
*Junichi Buto
Bernice Say Chock Chang
How Tim Chang
Clossen Yatsuo Chikasuye
Betty Kim Hoon Ching
Lillian Moo Ching
Summer Cho
Lin Tung Chun
Hison Chung
*Bernice Wilma Clark
Genevieve Brown Correa
Genevieve Naomi Coulson
**Joseph Aio Crowell
Vernon Aloysius Chun Dang
Pershing Wilson Devereux
**Fay Vincent Domke
Paul Kenneth Findeisen, Jr.
Phyllis Bow Kin Fong
**Marion Gemma Franson
Masaichi Goto
James Forrest Greig
Michiko Haga
Konno Hakoda
**Barlow Edwin Likolau Hardy
Yoshio Hashimoto
Yukiko Hata
Yuji Hayashi
Ferdinand Frederick Hedemann
Nadine Jeanette Hegler
*Harry Hiroshi Higa
Robert Shun Cho Ho
**Eleanor Hobby
Cornelia Womble Hoge

John Chan He Hong
Thomas Heiichiro Ige
Thomas Tan Imai
Nora Kiyomi Kagawa
*Yun Yau Kam
Edna Yukie Kihara
Sarah Kim
Yoshie Kisada
Beverly Koch
*Arthur S. Komori
Yoshio Kondo
*Grace Sumiko Kouchi
Henry Sau Lun Lai
*Benedict Wun Lai
Albert Kim You Lee
*Caroline Lee
June Jungie Lee
*Edmund Yew Fong Leong
*Sung Hi Lim
Sidney Lamblias
Yen Chin Loo
Wa Sung Lum
Samuel Koa Lyman

**Helen Ruth Maddox
Masami Maeoka
Ralph Seiki Matsumoto
Takashi Mayeda
Anna Belle McComb
Machiyo Mitamura

(Honors in History)
Woodruff Hiroo Miyagi
Howard Yoshihiko Miyake
George Hichiro Miyamoto
Hitoshi Miyamoto
Robert Yoshihiko Miyamoto
Lawrence Masao Miyasato
Larry Yoshito Mizuno
Helen Mamie Moeller
Richard Toshito Monden
Kenneth Kanji Nakamoto
George Masatoshi Nakano
Arling Atsuo Nakayama
Caroline Ne
George Hu Nip
Miye Okubo
Harry Tatsumi Oshima

(Honors in Economics)
DEGREES CONFERRED IN 1940

Thelma Genevieve Parish
**Mabel Postl
**Macon Venable Raine
Edean Jocelyn Ross
**Mary Catherine Rothrock
**Vivian Grace Sanger
*Nobu Sasai
Sybrand Schaaftsma
Robert Martin Schultz
Robert Hiroji Sekiya
Yoshimi Shimizu
Francis Marion Smith
Barbara Smythe
Arthur Alvin Stranske
**Jean Elizabeth Cowan Strohlin
Klara Kie Sugano
**Albert Tatsuro Suzuki
Muriel Clarice Swift
*Clifton Toichiro Takamura
Etsuyo Takamura
**Moses Tsutomu Takasaki
Thomas Takeichi Takemoto
Keiichi Takimoto
*Nobuchi Tamanaka
Mitsue Tanaka
Toshimi Tatsuyama
Marcia Jane Thomas
Thelma Lo Oi Tong
Kazu Tsukiyama
Hannah Siu Jin Tyau
Tadashi Uchigaki
*Takeshi Ujiki
Hidehiko Uyenoyma
Dorothy Yoshie Watanabe
Shinichi Watanabe
Margaret Elise Wiedeman
Clifford Willey
**Fannie Beatrice T. Wong
Francis Fun Chung Wong
James Tuck Sheong Wong
Robert K. S. Wong
Ruth Glam Yee Wong
Sau Moi Wong
Yuk Moon Wong
Betty Anne Worthington
Tetsuro Yamahira
Ryoichi Yamasaki
Hon Ning Yee
James Yoon
Tadayuki Yoshinaga
Hoon Yee Young
Marilyn Ah Pung Young
Pamaialoha Estelle Young
Richard Sun Wing Young

BACHELOR OF EDUCATION

*Elizabeth Kaaona Abrehamsen
Marion Aiu
Yachiyo Aizawa
Yeiko Ajihu
*Priscilla Kalanihauioli Akana
Betsy Henrietta Porter Akau
Shigeko Akimoto
May Ching Ako
*Madeline Shon Anderson
*Irene Tung Lin Yong Au
*Mildred Awa
*Harriet Kamakia Awana
Doris Misaka Betsui
*Olive Lindsay Braue
John Carlyle Cass
Beatrice Fung Jun Chang
**Harry Toyama Chang
Betty Dong Moi Chee
Flora Ace Ching
Florence Elisabeth Kealiimaemae Ching
*Mabel Kui Lan Ching
*Ruth Alberta Ching
*Ah Moi Lee Chock
**Jennie Kam Chock
**Juliette Ching Chock
*Rose Haena Chock
Evelyn E. Y. Chong
*Amy Yun Nyuke Chuck
Ah Seen Chun
Mabel Chang Chun
*Sing Chan Chun
**Kam Yuen Chun-Akana

Lillian Kinney Costa
**Bertha Loreta Craig
**Christine Seneva Dods
Muriel Mew Quon Dunn
Joseph Tavares Ferreira
**John Albert Ferreiro
*Marion Franco
**Umeko Fujii
Betty Kinuyo Fujimoto
Yoshio Fujimoto
*Doris Midori Fukuda
**Bessie Ako Furukawa
Kosaku Furuto
**Fannie Phyllis Goo
Hazel Kuulei Goo
*Helen Shizuno Hayashida
**Misao Higaki
Marjorie Capps Hind
Florence Ah Kyau Ho
*Catherine Isabel Hustace
*Florence Kaleo Ichinoise
Kazuo Ikeda
**Ellen Yaino Imamura
Albert Yoshito Inaba
**Ernest En Ing
**George Luke Ing
**Ruth Rutsu Sakuma Ing
Agnes Mai Son Inn
**Muriel Lyman Isherwood
**Ellen Stewart Kahanu
*Mabel Pung Kalapa
Ethel Yuk Yin Kam
Cornelia Keaomahuilani Kamakau
Shizue Katashima
Thelma Kaulileimomi Kauka
Matsuyo Kawamura
**Clara Nan Kim
**Emma Kawamoto Koga
*Lucile Ellis Kuhlmann
**Bernice Violet Michell Kuhns
*Violet Lau Lai
Amy Choy Lau
*Susan Kwai Lau
Grace Kim Tai Chai Lee
**Joseph U. Lee
**Tai Hi Lim
**Annie Ling
**Mildred Yuen Pin Liu
**Sarah A. Loo
**Violet Sun Kim Loo
**Ah Lu Lum
**Elsie Dang Lum
**Nan Kin Lum
**Rose Leialoha Lyau
**Marion Lyu
Rachel Ululani Mahikoa
**Elvira Maxine Tokolo Mathews
**Yukie Matsubayashi
**William Seong Mau
Chetwynd Harold McAlister
Veronica Lui Kwan Medeiros
*Ruth Horne Merrill
**Percy Kiyoshi Mirikitani
Toshiko Misumi
Tamae Miyajima
**Marjorie Yoshiko Miyake
**Tsuruno Miyamoto
**Herbert Iwao Morimoto
**Mildred Douse Morris
Mika Nakanishi
Misue Ogata
**Chise Oka
**Merle Michiko Okada
Richard Kunio Okamoto
Kenneth Seikichi Okuma
*Edward Kumao Okuna
Tokuji Ono
*Marjorie Helen Paulsen
Cecilia Ponte
Gretchen Henrietta Bertha Reichardt
**Bernice Kawao Rodrigues
*Lovie Guess Russell
**Esther Chang Shim
**Elsa Lackey Singleton
**Alice Louise Smith
Amoe Rose Punielei Spencer
Katherine Spencer
*Evelyn Kam Young Sunn
Michio Takagi
Helen Kim Tam
Mitsuko Tanioka
Kimyio Tokioka
Annie Kaua Trevenen
*Elizabeth Shuk LiaM Tseu
Naoko Tsukiyama
**Agnes Ogawa Ueki
**Lily Saruhashi Uyeda
*Sylvia Genevieve Stuart Wade
**Thelma Boyum Watson
Lucy Winston Whigam
**Nee Chang Chock Wong
Rose Gertrude Akina Wong
**Ruby R. Wood
Kiyoshi Yabui
**Lillian Fujimoto Yamashita
**Mary Lam Yap
Constance Kam Nee Yee
Agnes Ngit-Ngo Yim
Charlotte Yuk Lin Yim
**Sarah Ne Yim
**Nobuko Charlotte Yoshioka
Hirosi Yoshizawa
**Amy Yuk Mee Young
**Elise Lan Young
Helen Young
Violet Hew Zane

Francis Ching Ako
Kim Chun Au
**Eleanor Awai
Ivy Awana
*Leland Earle Black
Irvine Baptiste Brilliance
Kaliko Mary Adams Burgess
Blase Camacho
*Florence Mary Ann Camara
Norman Pearce Carmichael
*Constance K. C. Ching
Lammy Yung Lum Ching
Mew Kun Ching
*Jane Christman
*Ernell Fungkwai Chuck
Dora Ep Chun
Haunani Katherine Cooper
Haruko Daikokuyu
Beatrice Hin Ling Tsui DeWood
Marjorie Louise Foley
*Isaac Isao Fukuda
Miriam Hahn
Yuriko Hiramoto
Etta Kon Kin Ho
Janet Kiyoko Imai
*Helen Mitsuko Inada
*Shizue Inamine
Kaname Kataoka
Yoshio Kiyotaka
*Chizu Kurokawa
*Katherine Yuen Kyau Kam Lai
*Frances Fung Choy Lau
Rosamond Kam Lin Lau
*Esther Yet Fung Lee
DEGREES CONFERRED IN 1940

Eunice Lee
Leinaala Myra Lee
William Chung Wai Lum
Charles Robins MacClean
*Ward Ellis Madden
*Mae Akiko Maeda
Edna Taye Matsumura
Anne Shigeko Miyashiro
Daniel Duk Sung Moon
*Mitsuko Muraoka
Florence Mikie Nakagawa
*Helene Yasuko Nakama
*Bert Noboru Nishimura
*Yuki Ogai
*Russell Tadashi Omoto
Thomas Tsutomu Osakoda
*Margaret Shizu Sakai
Douglas Saichi Sakamoto
*Mildred Lai Seto
Katsuki Shimazu
Michiko Shimokawa
Vera Yen Kum Sue
Kiyoko Suzuki
Fudeko Tamate
Betty Yoshie Tanaka
*Mae Akiko Maeda
*Noboru Nishimura
*Yuki Ogai
*Russell Tadashi Omoto
**Margaret Shizu Sakai
Douglas Saichi Sakamoto

PUBLIC HEALTH NURSING CERTIFICATE

Eunice Simmons Boggs
Marvillee Kahinano Buchanan
Frances Nelson Buehler
**Ruth Canaday
**Georgia Fern Fuehrer
Blanche Ethel Gay
Josephine Phelps Hall
Ellen Chung Hon Leong
Norma Nelson Shapio
Loretta June Stauffer

41