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* Died January 9, 1957. Willard Wilson, as Acting President, served until May 15, when ex officio membership on the Board was terminated by Legislative Act 69.

UNIVERSITY OF HAWAII BULLETIN

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To the Governor and the Legislature
of the Territory of Hawaii

Gentlemen:

It gives me a great deal of pleasure to transmit this report for the year ending
June 30, 1957, in accordance with authority granted me by the Board of Regents.

I would like to take advantage of this opportunity to express appreciation for
the long and valuable service rendered by two retiring members of the Board:
Mr. J. Garner Anthony and Mr. Clayton J. Chamberlin.

During the year death took our president, Dr. Paul S. Bachman, two members
of our staff, Dr. Cheuk-Woon Taam, associate professor of Chinese studies, and
Mr. Zera C. Foster, specialist in soil management, and Dr. Harold L. Lyon,
chairman of the Manoa Arboretum committee and benefactor of the University.

At the end of the period we had in our employ 381 faculty members, 141 agri­
cultural workers, and 376 Civil Service employees -- a total of 907. Overall this
represents a highly qualified professional staff that is exerting increasingly
important influence on all the life of the Territory.

The year, the fiftieth since the founding of the University, was an outstandingly
active and successful one. I take pride in submitting this account of it. In so doing
I wish to stress the fact that the University's achievements during this period would
not have been possible without the strong support and sympathetic understanding of
the Legislature and of the executive branch of the Territory.

Respectfully,

Willard Wilson
Acting Executive Officer
Board of Regents
INTRODUCTION

This is a departure from the conventional annual report. In it I propose to share with you the highlights in our Fiftieth Anniversary, a year-long celebration which was enriched by the enthusiastic participation of our resident faculty and by the stimulating presence of a corps of outstanding scholars from the leading educational centers of the nation. It was a period of profound inquiry into our past, of careful assessment of our present, of wise predictions of the course which our responsibilities will take. It included scholarly addresses, stimulating discussions, fine entertainment, humor, and good fellowship. An atmosphere of excitement pervaded the campus. This report will have accomplished its purpose if it conveys in some measure a few of the stimulating and enjoyable experiences which accompanied this high point in the annals of an American university, and indicates by implication a few of the challenges lying ahead for the University in its continuing efforts to meet the needs of our changing times through service to the community, the nation, and the scholarly world.
This year the University of Hawaii celebrated the Fiftieth Anniversary of its founding in 1907 as the College of Agriculture and Mechanic Arts. It was a period of self-examination by our scholarly faculty and of assessment by distinguished guests. Among these were Secretary of Agriculture Ezra Taft Benson, two former presidents of the University, Dr. David L. Crawford and Dr. Gregg M. Sinclair, two eminent Charter Day speakers, Dr. Reuben G. Gustavson and Dr. T. V. Smith, whose presence was made possible through the generosity of Mr. Thomas Watson, president of the International Business Machines Corporation, and a number of visiting professors, nine of whom spent a semester in our midst as grantees of the Carnegie Corporation of New York. They taught our students, consulted with our faculty, conducted research, and were generous in their public appearances both on and off the campus. Their names and affiliations are to be found at the back of this report.

The Carnegie Visiting Professors were ambassadors with two-way portfolio: they brought academic tidings from their widely distributed campuses, and they took back with them enthusiastic reports of Hawaii and her university. Here is what two of them wrote just prior to their departure: "This has been one of the richest, most satisfying periods of my life. Hawaii and its people, in and out of the University, have got hold of me in these five months in a way I should never have thought possible, and leaving is going to be almost unbearable."
Another of the nine wrote: "I feel that the opportunity to acquire first-hand knowledge of the University, of the cosmopolitan community of Honolulu and of the wide and varied world of the Hawaiian Islands has added a new dimension to my knowledge of America and of the Pacific."

We can depend on such visitors to advance Hawaii's reputation abroad.

Much planning went into the celebration of which they played such an important part. The theme selected was "Higher Education in the Pacific: A Foundation for Freedom," the latter part of which was suggested by a letter of Thomas Jefferson's. The emblem of the celebration was the stick image of Lono, the Hawaiian god of agriculture, rain, language, communications, wisdom, truth, and peace.

The Anniversary Committee planned symposia in five fields of major importance: agriculture, education, geophysics, sociology, and the humanities. These were open to the public, as were an alumni luau and activities of the art, drama, music, and speech departments. An essay contest was conducted throughout the high schools of the Territory, and a speakers bureau supplied speakers to civic, service, and social organizations throughout the year. The students sponsored a College Quiz Bowl, a Model United Nations, and a coffee hour appropriately titled "Life Begins at Fifty." The Board of Regents honored Secretary and Mrs. Benson at a dinner at which food produced exclusively in Hawaii was served. Numerous luncheons, receptions, teas, and dinners were given to celebrate the occasion and to honor its distinguished guests.

These events attracted from the community crowds of visitors, many of whom had not been on the campus before. The events themselves, together with the public notices, radio programs, and the printed publications which they occasioned, served to promote the greatly-to-be-desired liaison between Town and Gown, and to give Hawaii's citizens a deeper appreciation and understanding of the achievements, plans, and problems of their university. There is reason to believe that the Anniversary Year added stature to the University in the eyes of the Territory and the nation.

**Broad Minds, Not Bricks**

One of the conclusions of great importance which was reached during the celebration was something that is self-evident in higher education circles but is otherwise not generally understood. It involves the very nature of a university. It is this: A university is not like a brick factory where clay is molded into rectangular blocks $2\frac{1}{4} \times 3\frac{1}{4} \times 8$ inches. It is not like any other branch of a state or territorial government of which it may be a part. Neither is it like our elementary and secondary schools, which are principally concerned with imparting basic information. Higher education has to do not with standard-sized bricks but with human individuals, not with bureaucratic procedures but with the intricate process of training the human mind, not with amassing endless information but with teaching young adults to think clearly and searchingly against the broad background of a liberal education.

The "society of scholars" which constitutes the core and being of a university consists of highly trained men well versed in their professions. They must be permitted freedom to deal with the delicate process of education. They must enjoy the confidence, the trust, and the support of the community in order to be permitted to do this important job well.

**A Society of Scholars**

It can never be said that our faculty is provincial, narrow-gauged, or bogged down because of superannuation. A survey of those serving during this Golden Anniversary year reveals some interesting facts.

Our faculty is relatively young—about three or four years younger than the average for other land-grant universities. They are scholarly—10 per cent more in the full professor rank hold
doctorates than the average for other land-grant colleges. They come from widely distributed points throughout the nation and the world—from 41 of the 48 states and from eight foreign countries—one each from France, Holland, New Zealand, and the Philippines, two each from Canada and Great Britain, three from China, and four from Japan.

They received postgraduate training in many of the best institutions in our country—20 of the 99 graduate schools they attended granted advanced degrees to nearly three-fourths of them as follows: Hawaii (91), Columbia (37), California (29), Minnesota (21), Washington (20), Wisconsin (17), Chicago (16), Harvard (15), Iowa State (15), Ohio State (15), Stanford (15), Cornell (13), New York (13), Michigan (9), Missouri (8), Northwestern (8), Southern California (8), Illinois (6), Michigan State (6), and Yale (6).

One of our visiting professors had this to say about our young, vital, and scholarly faculty: "I was particularly struck by the intellectual quality of the members of the faculty . . . . As a center for Pacific area studies, it seems to me inevitable that the University of Hawaii will become a mecca for scholars all over the world."

A Foundation for Freedom Viewed from the threshold of its second half century of growth, the prospects of the University of Hawaii, as those of the community it serves, are unlimited: continued inquiry into the rich resources of the soil, the sea, the sky, and the physical world around us; progressively important study of relations between segments of our remarkable population and between our civilization and those of our neighbors to the West; the training of our increasingly exigent youth for useful lives and enlightened leadership; service to the expanding cultural and economic needs of our Islands and to the increasingly urgent strategic needs of our nation and the free world.
"We cannot be content merely with minimizing growing pains. . . . We must more effectively spread higher education beyond the classroom, both from the point of view of time and of space. . . . It must become a fundamental part of the whole life of the individual."—Paul S. Bachman, October 5, 1956.

BRIGHT SPIKES IN THE RESISTANT OAK

For three years our Committee on Excellence in Teaching has concerned itself with a wide variety of matters ranging from surveys of classroom lighting, furniture, and audio-visual facilities, to sponsorship of faculty seminars, orientation of new faculty members, study of the needs of superior students, and ways in which to increase the effectiveness of teaching.

This year this vital and active committee invited some of our Carnegie Visiting Professors to join some of the resident faculty in delivering a series of informal talks on Excellence in Teaching. Carnegie English Professor Richard Armour posed the provocative problem: How can we lure students, from the very start of their college career, into a meditative, analytical, intellectually creative frame of mind. "How," he asked with characteristic humor, "can we make them more than mere empty buckets, and sometimes very leaky buckets, being filled, class after class and semester after semester, from a dozen or so of faulty spigots?"

He confessed that he had reached the realization that in order to make students think deeply and originally, the teacher must think deeply and originally himself. As a solution he suggested freshman seminars, recalling that the word means "the sowing of seeds." He said that "if we plant seeds in the freshman year, we shall be able to nourish their growth for four years and perhaps have something sturdy enough for transplanting by graduation time."

Ability to organize classroom material, a sympathetic understanding of the point of view of the student, verbal fluency—these, according to Dr. John M. Digman, associate professor of psychology, are the attributes of a good teacher. But stimulation of learning, stimulation of that "itch to acquire mastery," depends, too, on personality and elusive traits, such as attitudes.
Carnegie Visiting Professor Richard B. Morris, a historian of note, went deeply into the "stimulation of the itch to acquire mastery over content." He expressed the opinion that the personality of the teacher is a dominant factor, and suggested that this as well as academic qualifications should be kept in mind when appointments are made to the faculty. In the absence of personality, lectures are likely to be deadly dull. A teacher, he said, must be able to "correct without wounding, contradict without discouraging, coax along without coddling." There must, he said, be rapport between teacher and student, and a sense of intellectual excitement without tension. And above all there must be humor, which contributes so greatly to a relaxed atmosphere and to intellectual give and take. Personality is a major factor in engendering this "sympathy between mind and mind." It is the interplay of personality and ideas between teacher and student that makes a college unique.

Dr. Norris W. Rakestraw, Carnegie chemistry professor, stated that on the graduate level, teaching—"pounding bright spikes of wisdom into the resistant oak of callow minds," he called it—becomes relatively unimportant. The important thing is the teaching that the postgraduate student is able to accomplish on his own initiative—reading, long literature searches, attendance at and active participation in seminars and colloquia, discussions and arguments with fellow students and professors, laboratory, "bull sessions" far into the night, and, the acme of all, learning by doing. "Here research is absorbed into teaching, and when the student is initiated into this mystery, he really belongs to the cult."

History Professor Arthur J. Marder made a powerful plea for more attention to that obscure person, the gifted student. He attributed this neglect to our traditional horror of the word "elite." He quoted Rear Admiral H. G. Rickover as saying that "the very thought of recognizing differences in intellectual ability is repugnant to our equalitarian philosophy. To put it bluntly, our schools do not perform their primary purpose, which is to train the nation's brain power to the highest potential." The survival of democracy rests upon the possession of good leaders in all fields.

What is being done to train the exceptional student, Dr. Marder asked? Practically nothing. He referred to administrators' "complete absorption in the terrifying problems presented by the tidal wave of enrollments in the immediate future." He offered suggestions: (1) special honor programs for superior students, designed to give them opportunities for more rapid and extensive development; (2) small, upper-division, seminar-type classes especially tailored to the superior student; (3) "tutorial courses," like those in the Oxford system, in which the instructor meets with the gifted student to discuss assigned reading and written reports.

We must face up to the fact, he concluded, that there is such a thing as the superior student and that the nation needs him badly, but that up until the present time he has been the forgotten man of higher education.

(Those seeking further information are directed to Excellence in Teaching—Informal Talks to Faculty Members, edited by Dr. Thomas H. Fujimura and Dr. Elizabeth Carr, July 1957, distributed free of charge by the University of Hawaii.)

Teaching How to Teach ▲ This year has seen a continued expansion of the program for training teachers for Hawaii's public school vacancies. Increased numbers of students have been enrolled at all levels. The admission of a larger freshman class and the transferring of advanced students from other colleges have given Teachers College an over-all increase of 232 this year. (It is anticipated that this increase will continue at about the same ratio next year. Details of this year's enrollment breakdowns are to be found elsewhere in this report.)

The 1957 Legislature included in the University budget, for the first time, money to cover the salary of the director of the
Reading Clinic, supported heretofore in its entirety by community donations. The Clinic is being moved to new quarters and has become an important adjunct to the teacher training program at all levels.

**As the Twig is Bent** "Experiences of Beginning Teachers—1907–1957" was the title of the Education Symposium. Dr. Robert W. Clopton was chairman and on the panel were three old-timers and three present-day graduate assistants, one each on the preschool, primary, and secondary levels. The former captured the audience with reminiscences of experiences as beginning teachers half a century ago. The latter impressed the audience with their earnestness, zeal, and dedication to their profession.

There were contrasts and similarities in the experiences of the two groups. Responsibilities of the present-day teachers appeared to be more complex than those of their retired colleagues, whose preparation would be considered sadly inadequate today. On the other hand, the "basic equipment" for teaching remains the same as it always was: a liking for people, a sense of humor, intelligence, flexibility, ingenuity, and a capacity for sustained effort—qualities which didn't differ appreciably from those cited by the Committee on Excellence in Teaching.

The need for teachers in the Territory, it became apparent, is more exigent than ever. Attempts to meet this need are being supplemented by an accelerated teacher training program and one which permits students to transfer with ease from the College of Arts and Sciences to Teachers College. These efforts are to some degree offset by the draining off of our trained teachers by mainland schools where they are at a premium and where salary schedules are more favorable. Our errant graduates must be replaced by teachers imported from the Mainland. The two-way exchange is not without its advantages in terms of a broadening of horizons of all concerned.

*Enrollment in Teachers College increased at all levels during the year. The teacher training program continued to expand in an effort to meet the needs of Hawaii's public schools.*

**Shelter to the Shorn Lamb** "We must more effectively spread higher education beyond the classroom, both from the point of view of time and of space. The process of higher education must not be confined to those years spent on the campus. It must become a fundamental part of the whole life of the individual."

These are the words of Dr. Paul S. Bachman, fifth president of the University, whose sudden death on January 9, scarcely more than a year after his installation, overshadowed the celebration. The words concluded the convocation which formally opened the Anniversary Year.

That year saw the completion of a plan for the furtherance of adult education which Dr. Bachman had initiated: the establishment of a College of General Studies. The new College provided the previously "unclassified" daytime student, as well as those
taking late afternoon and evening “extension” courses, with a dean of their own and with all the services regularly enjoyed by the students working toward a specific degree. The academic winds were thereby tempered to the collegeless lambs.

Through the University’s expanding range of college credit and noncredit courses higher education is available to qualified people who cannot attend school on the campus in the daytime.

Also, its facilities for instruction make it possible for many to broaden their cultural backgrounds, gain insight into the demands of responsible citizenship, and prepare themselves for competent participation in the business and professional affairs of the community.

The enrollment in credit courses—now offered on the campus and at Schofield Barracks, Fort Shafter, Pearl Harbor, and Tripler Hospital—increased 35 per cent. About 40 per cent of all evening credit students are servicemen.

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<th>INDIVIDUALS</th>
<th>ENROLLMENTS</th>
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<td>CREDIT: Summer 1956</td>
<td>23</td>
<td>556</td>
<td>686</td>
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<tr>
<td>First Semester 1956-57</td>
<td>42</td>
<td>1118</td>
<td>1883</td>
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<tr>
<td>Second Semester 1956-57</td>
<td>48</td>
<td>1118</td>
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| CORRESPONDENCE: | |
| Active enrollment as of October 1, 1956 | 40 | 182 |

| NONCREDIT: | |
| Summer 1956 | 41 | 807 |
| Fall 1956 | 44 | 850 |
| Winter 1957 | 46 | 1065 |
| Spring 1957 | 41 | 1264 |

These courses were taught by 78 members of the faculty and 90 professional and business members of the community.

Special activities during the year included three postgraduate dental courses and a program of four courses for firemen. The College gave administrative assistance to a Small Business Management Institute and to a program for shop stewards. Individual courses were offered to particular groups in such fields as meteorology, speed reading, and Japanese block printing.

Off-duty education is stressed as an opportunity of Service life. Airmen and flight nurse shown below attend evening credit courses—each working toward a degree.

Twentieth Century Music was taught by Honolulu Symphony Director George Barati. It proved popular with married couples and families.
University evening courses offer opportunities to many residents to pursue hobbies. Such courses, as the one in wood carving shown above, can be profitable as well as relaxing.

**Down to Business**  
Enrollment in our College of Business Administration increased from 757 to 781. The College sponsored the Small Business Management Institute attended by 475 individuals. The Institute received a high evaluation rating. The College initiated programs in insurance and real estate.

For the fourth consecutive year the University sponsored an Advanced Management Program staffed by faculty members of the Harvard Graduate School of Business Administration and held on the Punahou School campus. It was attended by some 60 local, mainland, and foreign business executives who migrated from such far distant points as Seattle, Brisbane, and Tokyo to confer for six weeks on administrative matters of mutual importance. The well-planned program offers participants opportunity for re-examination of experience and formulation of new ideas.

Associate Professor John B. Ferguson and Dean Harold S. Roberts demonstrate IBM equipment. Students in the College of Business Administration learn that products of the intricate and complicated business machine, now an integral part of American business, greatly influence the life we live.
Graduates of the University of Hawaii School of Nursing regard the social and cultural benefits of college training as personal and professional assets. The complex medical world calls for ever-increasing background and skill for the professional nurse whether she be in the doctor's office, the hospital, or health education.

Bridge Builders ▲ The outstanding achievement of our engineering undergraduates enabled the College of Applied Science to establish a chapter of Chi Epsilon, the national honorary society for civil engineers. The acting dean of the College—a visiting professor, and therefore a prophet not without honor—underlined "the vital importance of keeping the University of Hawaii abreast of our current scientific and technological developments." "The Territory," he said, "must be continually reminded that tremendous changes are in the making and that properly educated individuals represent one of our most vital needs."

Ladies of the Lamp ▲ Another activity of the College of Applied Science is the School of Nursing. Among the many persons passing through Honolulu who gravitated to the University was Miss Agnes Gelinas, chairman of the Skidmore College School of Nursing, who was on her way to the University of the Philippines to serve as consultant in nursing education under the China Medical Board of New York, Inc.

Miss Gelinas spoke of the dynamic leadership of the director of the University's School of Nursing and of the effective use of the well-qualified, dedicated, and full-time staff. She stated that she was "very impressed with the collaborative relations between the faculty in nursing and other faculties in this institution" and "the cooperative relationships which are being developed by the faculty and students of the University and the personnel in the associated institutions and agencies." She referred also to "the wealth of clinical facilities on the Island," making it possible for the student nurse to study the care of patients in a variety of settings. She remarked that "the faculty is growing in wisdom and
increasing in numbers as student enrollments grow larger" and predicted that "exciting days in nursing education lie ahead."

**Agricultural Opportunities**  ▲  The College of Agriculture added programs leading to the master's degree in Tropical Crop Science and Animal Science. Talks on opportunities in agriculture and home economics were delivered at 11 high schools on three islands in an effort to stem the decline in these fields here as elsewhere, and to underline the need for such scientists. To these same ends, the College sponsored a program for high school principals and counselors.

**Agricultural Extension**  ▲  The Agricultural Extension Service held 9,671 meetings attended by 27,937 citizens of the Territory, and its agents made 15,940 farm and home visits. The 155 University Extension Clubs, whose membership totals 2,422, conducted an active program among Hawaii's homemakers, as did the 308 4-H Clubs among 4,381 of our young citizens.

The Economic Planning and Coordination Authority conducted an opinion survey of commercial agricultural producers in Hawaii. It revealed that "the University of Hawaii Agricultural Extension Service was named more often than any other outside source of new ideas by farmers interviewed." The Extension Service is a service indeed.

**THE KEY TO NEW KNOWLEDGE**

Nine new research projects were added to the 148 currently conducted by the Agricultural Experiment Station; two were completed. Significant activities included:

- Agronomists have developed techniques on range revegetation which make possible the dramatic improvement of range land in areas of high rainfall and acid soils, so that one instead of 20 acres will be necessary to support a cow per year.

- Soil scientists have discovered and mapped areas of bauxite deposits on the major islands in the Territory that exceed any...
G. Donald Sherman, soil scientist at the Hawaii Agricultural Experiment Station, examines a sample of pure gibbsite aggregate (bauxite) found on the island of Kauai by the HAES in 1955. Gibbsite was first identified in Hawaii in 1947 by the HAES.

other source of aluminum ore now known in the United States.

Animal scientists offer promise for an economically feasible beef cattle pen-fattening industry in which rations containing as much as 86.5 per cent of locally produced feedstuffs will not only reduce beef imports but increase utilization of locally produced feedstuffs.

Horticulturists have increased the fruiting efficiency of the passion fruit vine which may enable the infant fruit juice industry to survive in mainland competition.

Poultry specialists, after five generations of selective breeding of a closed flock of New Hampshire chickens have demonstrated that pedigree breeding of chickens in Hawaii offers the same promise for poultry improvement as does this technique on the Mainland.

Entomologists have discovered two virus diseases which are effective in combination against the armyworm.

The Growth of the Soil: Dr. David L. Crawford, former president of the University, was chairman of the symposium entitled “Progress and Potentials in Hawaiian Agriculture.” He had returned to the Islands especially to attend the Fiftieth Anniversary celebration. On his way west, he told his delighted audience, a service station attendant was bemoaning how hard it was to get a job. “It’s come to the point,” he said, “where if you don’t have a college education, you have to use your head!”

Dr. Crawford introduced former Station Associate Director Louis A. Henke, who, though retired, still continues his research. Mr. Henke traced the Station history from pre-University times, when Mr. Jared G. Smith, our venerable fellow citizen, came to the Islands to set up a station for the federal government. In those days fruits and vegetables arrived jumbled in trunks from neighbor islands. Since that time great improvements have been made in variety selection, cultivation practices, and marketing techniques.

He cited the work done on the Pearl Harbor tomato, the Hawaiian wonder bean, coffee, the macadamia nut, orchids and other tropical flowers and foliage, and frozen fruits and fruit juices, such as those of the guava and the passion fruit.

In addition to its study of diversified crops, the Station, he said, had done much to develop profitable by-products of the sugar and pineapple industries which reduced importation of swine and poultry feeds and affected favorably our import-export balance.

Extension Director Y. Baron Goto contrasted the Hawaiian farmers of 50 years ago with those of today. In 1907 they were poorly educated native Hawaiians and non-English speaking Asian peasants practicing subsistence farming on marginal lands and
Rosenberg. It is largely the result of an institution unique to the United States: the land-grant college whose Agricultural Experiment Station conducts research and whose Agricultural Extension Service introduces its results to the farmer.

This great productivity has been responsible for critical surpluses of certain basic crops, he said. And yet continuation of research is urgent, he insisted. The growing population of the country and the gradual restriction of agricultural lands resulting from urbanization and highway construction demand that we learn to produce more and more food and fibre on less and less land.

As for Hawaii in particular, Dr. Rosenberg needs only to recall the inscription above his door:

Research is the key to new knowledge.
It is the cheapest investment a community can make
toward the permanent improvement of its economy.

A POWERFUL CREATIVE FORCE

Secretary of Agriculture Ezra Taft Benson was invited to the Territory specifically to dedicate the University's new agricultural building as part of the Anniversary program. Before the dedicatory ceremonies, he addressed an audience which overflowed our largest auditorium and marked the first use of closed circuit television on our campus. He characterized Abraham Lincoln's
enlightened land-grant act of 1862 as "an immensely significant milestone" which brought into partnership the federal government, the state and territorial governments, and our educational institutions. He stated that the University of Hawaii and her sister land-grant colleges and universities throughout the nation had been "a powerful creative force in the American free-enterprise economy." Largely as a result of this partnership, he said, our farmer today produces three times as much food and fiber as he did at the time the University was founded. "In no other nation today," he said, "do so few farmers produce food and fiber—to feed and clothe so many—at such a relatively low price."

The Secretary attributed this astonishing achievement to research and educational programs which introduce to individual farmers ways in which to reduce costs, improve quality, and expand markets. Speaking specifically of Hawaii, he stated that "the people of this Territory—both farm and nonfarm—have a keen understanding of the need and value of agricultural research and education. Your pineapple industry and your sugar industry are classic examples of the use of research in overcoming formidable obstacles."

He revealed a startling fact about Hawaii. "Because of the scarcity of feed," he said, "milk production costs are so high that the average consumption of milk is less than one-third of that for the United States as a whole." He stated that this fact is being attacked soundly through the use of the nutritive products and by-products of local industry as livestock feed. He spoke also of good response to work with range forage, poultry management, improved varieties, the export of flowers and frozen fruits, and marketing research. He cautioned against discouragement in the tough battle to wrest markets from competing mainland products, but pointed to the tremendous advantage to the Island economy that is at stake. He applauded the decision of the Armed Forces to buy local foods to the greatest extent possible.

The Secretary expressed great faith in a brighter future and in the fact that the land-grant family will be a prime force in achieving it. "Trained brain power is our foremost national asset. . . . If the history of the past 50 years tells us anything," he said, "it tells us that the building of America is not finished. . . . In a special way, you are building America right here—at this University—50 years young—where you realize that wisdom is found only in truth."

At the conclusion of his address, the Secretary was awarded an honorary degree of Doctor of Laws and then dedicated the new agricultural building in honor of Mr. Louis A. Henke, former

Mr. and Mrs. Henke and daughter, Jean, stand by the new agricultural building dedicated in Mr. Henke's honor.
associate director of the Agricultural Experiment Station, where important research on the profitable use of the by-products of local industry had been conducted under his supervision.

**Other Halls of Learning**  
During the Anniversary Year, other buildings had been constructed or nearly completed as a result of the foresightedness of the 1955 Legislature—a new and modern High School Building as an important and long-anticipated adjunct to our teacher training program; our first dormitory for men, which enabled us to dispose of disgracefully substandard veterans' barracks; and a Physical Education Building which made possible abandonment of the leaky, inadequate, and unsafe gymnasium erected almost 30 years ago. In addition, the old library building—now George Hall—was renovated to accommodate classrooms, offices, and laboratories of the art, speech, psychology, and European languages departments. Moreover, numerous but nonetheless important improvements were effected. These had to do with lighting, walks, and planting, and with the removal of more of the 62 barracks-type buildings which were brought in to enable us to handle the unprecedented student population after World War II.

Work was completed on the Bachman Master Plan, which projects the physical development of the University through the next decade. The campus is becoming a place in which the University and the community it serves can take increasing pride.

**The Humanistic Storehouse**  
The purchase of additional furniture has doubled the seating capacity of the Gregg M. Sinclair Library. However, accommodations are still not available for all those who wish to use the library as a place to study—a situation which can be alleviated by the provision of study halls in future classroom buildings.
Outstanding among gifts was the Rockefeller Foundation grant of $30,000 (referred to elsewhere) for the purchase of research material on the Pacific Islands over the next five years. This will greatly aid us in our efforts to become a center for advanced study in this area. Other outstanding gifts include:

1. Funds provided by the Samuel N. and Mary Castle Foundation to establish a paper-bound collection of 360 selected titles for recreational and cultural reading. The students' use of this collection has been most gratifying.


3. A collection of rare early European books by Mrs. Henry B. Clark, Jr.


5. The manuscript of Rascals in Paradise by its authors, James Michener and A. Grove Day.

6. An extensive collection of Oriental music collected by Miss Barbara B. Smith.

7. A large and valuable collection on Hawaii and the Pacific islands by Judge Edward A. Towse.

8. A manuscript of Tennyson's "The Lotus-Eaters" by Mrs. Jon Wiig.

9. A fund for the purchase of books in mathematics and engineering by former students of the late Professor Ernest C. Webster.

The net increase in bound volumes—those added by purchase, government deposit, gift, and binding, less withdrawals—was 8,474, bringing our total inventory up to 273,221.

Our unbound parts stood at 702,352, our microfilm titles at 3,745, our maps at 32,621, our current periodical titles at 4,242.

Our general circulation was 121,553 and our reserve book circulation 76,729.

The magnificent new building, with its convenience, good lighting, and functional arrangement, has greatly stimulated the daily use of our collections.

Desks by open stacks facilitate use of reading materials in the Gregg M. Sinclair Library. Seating capacity, double that in the old library building, is still insufficient to accommodate all who wish to use the library as a place to study.
University anthropology and engineering students participated in the exploring, surveying, and mapping of Honaunau, a Bishop Museum project, on behalf of the National Park Service.

MASTERY OVER MATTER

The Graduate School had an enrollment of 1,549, of which 162 were studying for master's degrees and 34 for the Ph.D. The issuance of a handbook served to clarify procedures.

The nonagricultural research program is directed by the dean of this School. It receives its support from mainland as well as local businesses and government agencies. The trend is in the direction of the physical sciences, with accent upon geophysics, satellite tracking, and several other important phases of the International Geophysical Year.

This young and vital faculty of ours is conducting an astonishing variety of research projects. Some 134 faculty members in 21 departments were engaged in nearly 250 different projects, many of them doing the work entirely on their own time. These are exclusive of the numerous research activities of the College of Agriculture, a summary of which is available on request. To give some conception of the scope of the nonagricultural work, I will simply list the names of 43 such projects. If you should care to have information on any of these, please so inform our Office of Publications and Information.

SELECTED LIST OF RESEARCH PROJECTS

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<tr>
<td>Anthropology</td>
<td>Archaeological investigation of Honaunau area for Hawaii National Park Service</td>
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<td>Botany</td>
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<td>Economics and Business</td>
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<td>Basic book list for high school libraries</td>
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<td>English</td>
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<td></td>
<td>Queen Emma's papers</td>
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<td></td>
<td>Lafcadio Hearn's translations</td>
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</tbody>
</table>
Entomology
Insects of Hawaii (Diptera)

European Languages
Translation of modern Greek drama

Geology
Bauxite in Hawaii

Government
Legislative process in the Pacific
Voting patterns in the United Nations General Assembly

History
Book: Hawaiian History 1898–1920 (in preparation)
Rise of United States interests in the Pacific

Legislative Reference Bureau
Study of large land owners in Hawaii

Music
Library of Asian music

Philosophy
Book: Source Book in Indian Philosophy

Physics
Electro fishing
Satellite tracking
Solar Flare Patrol
Solar Radio Noise Patrol
Cosmic ray monitoring

Psychology
UH students’ use of their time
Race factors in Hawaii voting
Hawaiian and mainland attitudes toward Negroes
Tourist attitudes in Hawaii

Social Work
Book: Four Case Studies in Hawaii

Sociology
Inter-racial marriage in Hawaii
Racial segregation
Race relations in Hawaii

Speech
The teaching of story telling

Zoology
Poison in Pacific fish
Nehu, the tuna bait fish
Transfer of radioactivity to man by fish

Patience, Persistence, Objectivity ▲ Over $103,500 was received in new research grants, contracts, and gifts from sources other than appropriated funds (exclusive of agricultural research).

Meteorology and Solar Flare Patrol (IGY) Air Force Cambridge Research Center $33,452

Professor Kenichi Watanabe operates a unit in the complicated apparatus called a Vacuum Ultraviolet Monochromator in which the sun is simulated by a hydrogen lamp and rarefied atmosphere by a vacuum. The Monochromator is used in determining effects of the sun’s rays upon the upper atmosphere.
Other miscellaneous grants dealt with tourist psychology, natural products, Hawaiian lavas, cosmic dust, organic chemistry, marine biology, and a potential botanical garden.

Research continued on similarly supported programs involving more than $150,000. These sources included, in addition to those listed above, the U. S. Atomic Energy Commission, the McInerny Foundation, the Carnegie Corporation, Eli Lilly & Co., the Office of Naval Research, the Research Corporation, and the U. S. Fish and Wildlife Service. The subjects of research included subjects as varied as the Hawaiian tuna, Hawaiian and Pacific sea life, plants, insects, volcanic gases, and rocks.

Funds for research in the physical sciences for the first time nearly equaled those in the biological sciences—due to increased emphasis on geophysics in general and meteorology (the study of conditions affecting weather) in particular.

Included in the latter program was the distinction of having been selected to offer training in tropical meteorology to British scientists assigned to the atom bomb explosion at Christmas Island.

One of the most important continuing programs is centered on the uptake of radioactive fission products by marine organisms, many of which are eaten in turn by humans. In conjunction with this program, the University operates a Marine Biological Labora-

tory at Eniwetok.

Of the more than $250,000 new and continuing projects referred to above, 65 per cent were supported by federal funds, 32 per cent by foundations, 2 per cent by individuals and corporations, and 1 per cent by the territorial government.

The University has received a million and a half dollars of such financing since 1945.

Volcanoes, Typhoons, and Tidal Waves

"The 50th Birthday of the University finds us on the threshold of a considerable expansion and development in the field of geophysics," Physicist Walter R. Steiger stated at the symposium, "Oceanography in the Twentieth Century." "We have begun to realize the existence of ideal conditions and unusual opportunities for geophysical research on these island laboratories in the Pacific. At this moment we are waiting with considerable anxiety to learn what action Congress will take on a proposal to establish here at the University a two and a half million dollar facility for research and training in geophysics."

He recalled that geophysics, the relatively young science of the earth, includes the land masses, the atmosphere, and the physics and chemistry of the ocean. It cannot avoid, he said, a knowledge of the influence and interaction of the earth's environment—the sun, the moon, the meteors, and the cosmic rays that shower down upon us continuously.

Chemist Rakestraw spoke of the chemical aspects of sea water, a seemingly simple but actually extremely complicated and complex substance that cannot be reproduced in the laboratory because we cannot duplicate its tremendously long time span. Sea water
involves many unexplained phenomena. Things just don’t happen the way one would expect them to. Is this because its molecules have been together for so many millions of years? The subject offers a fertile field for research.

Geophysicist Hans Pettersson recalled the Swedish Deep-Sea Expedition which he had led into the Pacific 10 years before in the “Albatross.” He spoke of the mysterious red clay which carpets the floor of the Pacific, and of driving his coring tubes 50 feet into it, each foot reaching back in history 100,000 years. He spoke of extracting from the core with a powerful electromagnet large quantities of radioactive dust from shooting stars.

He spoke of filtering this star dust from huge volumes of pure air at the high altitudes of Mauna Loa and Haleakala and sending samples for analysis by the Atomic Energy Commission. He spoke of this dust in terms of condensation nuclei in the upper air and thus a factor in our weather and our climate.

For 10 years, Dr. Pettersson had strongly advocated the establishment at the University of Hawaii of an Institute of Geophysics whose function it would be to conduct research in oceanography, meteorology, and volcanology. He based his contention on the fact (1) that Hawaii is located near some of the world’s greatest ocean depths, (2) that her atmosphere is unusually clear due to her great distance from the desert dust and industrial smog of large land mass areas, and (3) that she has high mountains, some of which are still actively volcanic, whose summits are readily accessible the year round.

Such an institute would help protect mankind from disaster by studying the nature of “tidal waves” and other phenomena of the sea, by learning more about weather and weather forecasting, and by inquiry into volcanic activity.

The University has had a long history of association with the Hawaii Volcano Observatory through the late Dr. Thomas Augustus Jaggar, the world-famous volcanologist who originally established the Observatory and who eventually became a member of the University’s research staff. A continuation of such research is assured by the prospective addition to our staff of Dr. Gordon A. Macdonald, a subsequent director of the Observatory.

Between the Thunder and the Sun ▲ Hawaii is strategically located not alone as regards commerce, communications, and our western line of defense. When nations round the globe decided to coordinate their celestial observations over an 18-month period
The parabolic antenna shown below is installed at Makapuu Point, headquarters of the Solar Radio Noise Patrol. The antenna rotates with the sun making a continuous record of radio signals emitted by the sun. Right, example of how solar disturbances are recorded. This project, one of those conducted by the University during the International Geophysical Year, is directed by Professor Iwao Miyake, Department of Physics.

called the International Geophysical Year, a mid-Pacific observation point was needed. Hawaii was ideally suited for this purpose because of her geographical location and because a nucleus of able scientists was available at her university.

Physicist Walter R. Steiger was placed in charge of mounting a special telescope on the slopes of a mountain for the purpose of tracking the course of the earth satellites as they flash across the empty ocean. He also was made responsible for organizing and training Moonwatch, a group of amateur astronomers whose function it would be to assist the professionals by spotting the speeding orb each time it comes round.

During the IGY, the sun was expected to pass through a particularly active phase. In the interest of a deeper understanding of the causes of disruption of radio communications and other phenomena, it was decided to keep the sun under constant observation. In quarters leased at Makapuu Point, Dr. Steiger set up a Solar Flare Patrol and, with the assistance of Physicist Miyake, installed a dish-type parabolic antenna for the Solar Radio Noise Patrol. A monitor was erected there for measuring bombardment of cosmic rays to which our planet is constantly subjected.
Charter Day observances were held in the Andrews Outdoor Theatre beneath a cloudless sky. Two eminently distinguished scholars spoke on complementary subjects: man's mastery of himself and man's mastery of nature. Dr. T. V. Smith, Syracuse University Maxwell Professor Emeritus of Citizenship and Philosophy, known to many as the originator of the CBS radio program, “University of Chicago Round Table of the Air,” spoke of the vast significance of the social sciences, dwelling on what marks the educated man. These he enumerated as the ability to solve life’s problems, resolve predicaments, and absolve oneself of guilt for failures. Passing on from the individual to the group, he stated that one of the most hopeful possibilities is that Hawaii’s race relations might one day become a “world experience.”

The second speaker was Dr. Reuben G. Gustavson, president and executive director of an organization with the inspiring name of Resources for the Future Incorporated. Having for five years been a member of the board of governors of the Argonne National Laboratory of Chicago, where a large part of our atomic energy effort is being made, he was well qualified to speak on “The Peaceful Uses of Atomic Energy.” He approached his solemn subject with a quip. He referred to his recent departure from educational circles to join The Ford Foundation as having left the academic gown to put on the foundation garment. He went on to say that while atomic energy, which is 400 million times as powerful as steam, is the subject of fear, it holds tremendous hope for the world as a source of power, of nitrate fertilizers, of agricultural yield stimulation, and of physical and mental therapy. It is possible, he said, that this force which puts civilization “in instant peril of dissolution” can, if properly harnessed, banish hunger and slavery. But to do this, man must somehow develop a reverence for life and an appreciation of human dignity. Nations must be willing to cooperate for the good of all mankind and to let science work in freedom as an international community.

The Peoples of the Pacific ▲ Perhaps the most deeply searching symposium—and certainly the one which was most intimately associated with Hawaii’s people—dealt with “The Study of Man and Society: Retrospect and Prospect.” Participating were Hawaii’s Dr. Andrew W. Lind (as chairman) and Dr. Bernhard L. Hormann, Bishop Museum’s Director Alexander Spoehr, and Radcliffe’s charming Miss Cora Du Bois.
Dr. Du Bois asked and answered searching questions about the theory and practice of sociology in general. Does sociology encompass the complete study of man? By no means. It is an academic subdivision (and a relatively new one) of the study of the most complex of phenomena, man. Are such studies scientific? That depends upon one's definition of science. Can they be applied to practical problems? Yes, within limits. Do they add to our rational understanding of man? Yes, in so far as man conducts himself in a rational manner. She predicted that "the twentieth century will be seen as the era in which the science of man was first formulated." Dr. Du Bois stated that "the University of Hawaii has shown great leadership in breaking down departmental barriers to achieve a rational comprehension of man."

Dr. Spoehr traced the history of Island anthropology since the first observation recorded by Captain Cook. World War II, he said, greatly stimulated the study of the culture, history, anthropology, and linguistics of the peoples of the Pacific area. Predicting increasingly important work in these fields, he stated, "the University of Hawaii must capitalize on research possibilities in the entire Pacific area, then utilize the results in creative teaching."

Dr. Hormann reviewed study of the rapid social evolution in Hawaii during its relatively brief history. He paid tribute to the broad concept of sociology held by Dr. Romanzo Adams, who was responsible for the first seminar in race relations as far back as 1926.

Dr. Lind stated that such undertakings as the 1954 international Conference on Race Relations in World Perspective had been made possible by the strong support of the Rockefeller, Ford, and McInerny foundations. In much of such work, he said, the University has taken the lead on a world-wide as well as a local scale. He underlined Hawaii's opportunities for social research as a result of her increasing role as an institutional and communications center. He said Hawaii has much information on rate of assimilation, interracial marriage, psychology of loyalty, and mental disturbances that is useful locally and abroad.

He posed an interesting question: Will "race relations" continue to describe the core of sociological studies in Hawaii now that attention is beginning to be focused on relations other than those of race?

**Ferment, Invention, and the Fabulous Frontier** By far the most lively and perhaps the most provocative symposium was that devoted to "The Role of the Humanities in Our Changing Culture." It was presided over by Dr. Gregg M. Sinclair, former president of the University. Fellow panelists were Art Department Chairman Murray Turnbull, Satirist Richard Armour, and Historian Richard B. Morris.

Dr. Armour described the half century as "vigoroust, various, experimental, and controversial." If it has not produced great writers such as Shakespeare, Milton, and Twain, it has given us an astonishing number of good and near-great writers. The short story and the short short story, he said, are a result of the accelerated pace of present-day living. "Stories have become shorter, automobiles longer. You can get a book into your pocket, but you can't get your car into your garage." He delighted his audience by predicting "a great period of one-sentence epigrams several of which can be read during a single TV commercial."

Can literary aspirants be taught to write? Dr. Armour was asked.

"You can teach them to find out what talent they have and
encourage it. Discouragement kills off more writers than anything else. A writer must have talent and will power; without one the other is useless.

"Much of the writing done in America today is by people who are working full time at something else."

On the other hand, sense and music are coming back into poetry. This has led to the popularity of recordings in which poets such as Eliot and Frost read their own poetry. The medieval monarch who snapped his fingers to summon his troubadors had no such resources at his command as we have today when we snap the switch of our Hi-Fi set.

Professor Turnbull characterized the contributions of art to the first half of the present century as "ferment and invention unparalleled for four hundred years." He stated that "for the first time in history the imaginative and creative drive of American artists have articulated [his pun was, perhaps, unintentional] in a new form."

Dr. Morris stated that "historians are shifting from mere politics to social, economic, and cultural history, and to the necessity of discerning the truth." By way of illustration, he said that it is relatively simple to determine who shot Lincoln. It is harder to discover why Booth did it. Harder yet (as we all well know) is placing responsibility for the disaster at Pearl Harbor.

Our era, he said, is one of increased maturity in foreign and domestic affairs. There is increased appreciation—for greater by industry, so far, than by labor—of the value of history. History has become big business. He referred to Hawaii as "a fabulous frontier linked to the continental mass by an air highway."

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SEEKERS AFTER TRUTH

ENROLLMENT DURING THE FIRST SEMESTER, 1956-57

CREDIT STUDENTS

Honolulu Campus
- College of Arts and Sciences: 1,515
- College of Applied Science: 828
- Teachers College: 1,132
- College of Agriculture: 243
- College of Business Administration: 677
- Undergraduate candidates for degrees: 4,395
- Candidates for advanced degrees: 98
- Candidates for 5-year diplomas: 150
- Graduate School candidates for degrees or diplomas: 248
- Total candidates for degrees or diplomas: 4,643

College of General Studies
- Other undergraduates taking credit courses: 1,403
- Other graduates taking credit courses: 447
- Total credit students not studying for degrees: 1,850
- Total credit students on Honolulu campus: 6,493

Hilo Campus
- Lower division students taking credit courses: 243
- Total students studying for credit: 6,736

*Enrollment was 0.7 per cent higher than in the previous year.
Student Services ▲ More students than ever before availed themselves of Student Health Services, especially by reporting to the dispensary for early diagnosis of illness—a tendency that will not only raise the general level of student health but establish a pattern in the individual student of a vigilant attitude toward health.

Over 3,500 Salk vaccine inoculations were administered to students.

Testing and guiding students is an important part of our student personnel program, for "effective counseling at all levels leads to better education at all levels." Counseling concerns personal, education, and vocational matters. It starts with pre-college problems, such as deciding what field to major in. To assist in making such decisions, our Bureau of Testing and Guidance has issued a popular pamphlet titled What Would You Like To Study?, which outlines the content and usefulness of every field.

Counseling follows the student right through college and on to problems encountered on the threshold of commencing life in the community. The Bureau would not presume to enter unasked into such grave decisions as to whom a student should marry, but it does assist him in the intelligent and realistic selection of a suitable vocation. This is important, not only to the individual, but also to a nation in which variously trained citizens are in alarmingly short supply. Take the need for scientists. One's fitness should be ascertained by a searching self-assessment. Guidance is invaluable. Here is where the Bureau can help. The encouraging thing is that the students are setting an increasingly high value on this service. More of them—13 per cent more over the previous year—voluntarily presented themselves for counseling. More—300 per cent more—subsequently returned for further assistance. Individual and group contacts rose to 7,276 as compared with 4,795 in the previous year. There is no need for our students to go into things blindly. Of this they are increasingly aware.
An innovation in the Office of Student Activities was a series of seminars in which faculty members and alumni discussed for the benefit of student leaders the value of student participation in the broader aspects of higher education.

The students' Hungarian Student Relief Drive won the support of local business under the leadership of Mr. Dwight C. Steele, director of the Hawaii Employers Council.

A study was made of Frear Hall, our principal residence for women, in order to determine what problems are commonly faced by students and how they may be assisted in overcoming them. The outstanding problem involved adjustment to college work. The condemnation of the veterans' substandard living quarters for 65 students and the completion of the new men's residence hall with a capacity of 80 does not represent a net gain, due to the fact that Atherton House, administered by the YMCA, has changed in character to become more in the nature of an international house accommodating foreign students and displacing local ones proportionately. At some time in the future, Hale Laulima, our off-campus residence for women, will have to be abandoned due to the fact that its age is responsible for inordinately high upkeep costs. These factors point to the increasing necessity for on-campus housing.

The pressure for such housing has forced the administration to invoke a policy previously established by the Board of Regents in which priority is given to neighbor island and rural Oahu students, more particularly those in the freshman class.

Students were assisted in obtaining off-campus housing and part-time employment both on and off the campus. The increasing shortage in housing in all of Honolulu has greatly increased the applications of students for both on-campus and off-campus housing.

Arrangements were made for the representation of business firms and government agencies who wished to recruit from our graduating class. Since 1955 we have been included in the Federal Service Entrance Examinations, a nationwide recruiting program among seniors. Since 1956 the Territorial Service Entrance Examinations, a similar program, have been held on the campus.

Our prospective placement officer will help to relieve our overburdened staff and effect closer liaison between graduating students and recruitment representatives.

Dinner honoring students with birthdays was the first of a series of special events planned for the year by a committee of students from University residence halls cooperating with the University cafeteria. Through the meal plan made effective this year, resident students may have two meals a day six days a week at the cafeteria at a considerable saving.
Twins, Sirimati and Susima Abeyagunawardene from Ceylon attend the University on AAUW awards.

“Old Hawaiian hospitality” is sure to please as indicated by Dewanto Danoesoebroto from Jogjakarta, Indonesia.

Mrs. Ma Ma Lay from Rangoon, Burma, is assisted in speech.

The Foreign Student ▲ During the year 103 foreign students attended the University—28 from Japan, 17 from the Philippines, 10 from Korea, 9 from China, 29 from a variety of Central and South Pacific islands, and one or more from Canada, Australia, Malaya, Thailand, and Brazil. Special orientation programs and speech courses were provided them.

For the fourth consecutive year the University conducted one of the nation’s eight Orientation (or, more accurately, “occidental”) Centers for Asian students on their way to undertake graduate study at American universities. A total of 41 scholars from Cambodia, Indonesia, Japan, Korea, the Philippines, Thailand, and Viet Nam attended the 6-week course, which included classes in idiomatic English and American political, social, and economic institutions.

The War Veteran ▲ Veterans of the Korean War have raised the veteran enrollment once again to the 1,000 mark. Our Veterans’ Adviser keeps a file on each of these and makes monthly reports to the Veterans Administration certifying eligibility for pay.

Twice a year the Veterans’ Adviser submits a report on every student registered at a draft board, whether it be a local or mainland one. Interim reports are filed upon request, or when demanded by important change in circumstances. Such reports were made on approximately 1,500 students. This number represents about 100 more than were registered during the previous year.

Implications of the Jet Age ▲ The Armed Services depend upon the country’s land-grant colleges and universities, where military training is obligatory, for the recruiting of a large percentage of their reserve officers. The University offers training in Military Science and Air Science. Enrollments and commissioning were as follows:

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<th>BASIC COURSE</th>
<th>ADVANCED COURSE</th>
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<tr>
<td>Military Science</td>
<td>436</td>
<td>124</td>
<td>67</td>
</tr>
<tr>
<td>Air Science</td>
<td>384</td>
<td>38</td>
<td>26</td>
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Lieutenant General Blackshear M. Bryan, Commanding General, U. S. Army, Pacific, inspects the ROTC rifles at the campus Armory with Colonel Richard S. Spangler, chairman of the Department of Military Science at the University.

At the 1956 summer camp at Fort Lewis, Washington, the University’s Army ROTC unit placed third among 30 detachments. Eleven of our 14 Distinguished Military Students who applied for commissions in the Army were appointed—several times the average for land-grant colleges.

One AFROTC cadet (one of only about 200 throughout the country) was tendered a Regular Air Force commission. All 26 of last year’s graduates are presently on active duty.

AFROTC Drill Team placed first in Area J (Western United States) Drill Competition. This is the first time that this team has gone to the Mainland for this purpose.

The Hilo Branch
Generally speaking, activities on the campus of the Hilo Branch were a reflection in miniature of those on the Manoa campus. They bespoke a vital and community-conscious faculty and an enthusiastic and enterprising student body.

The Branch sponsored more than a score of lectures and group discussions by Carnegie and Summer Session Visiting Professors, American Universities Field Staff members, and members of the

Cadets of the University Air Force Reserve Officers’ Training Corps examine litter used in Air Reserve operations by the 11th Air Rescue Squadron at Hickam Air Force Base. Visits to the Base supplement classroom instruction.
resident Manoa and Hilo faculties. The students participated in year-round events that included orientation programs, Ka Palapala Beauty Contest, Christmas banquet, semester break camp, "Little Rainbow Dance," and choral trip to Maui. They issued their own newspaper and yearbook, produced a workshop play, held debates, sponsored a scientific display, and participated in athletics. They combined with the Fiftieth Anniversary the celebration of their Tender Tenth.

Campus improvements totaled $45,000, which included roads, a parking area and Phase One of a landscaping project.

One point stands out in the year's record: the extent to which the campus facilities were used by the community (20 organizations involving 3,000 individuals) and the frequency with which the faculty contributed to community activities (63 talks to 49 groups; number of boards served on, contests judged, broadcasts made, drives, concerts, exhibits, conferences participated in, community organizations joined)—all neatly tabulated in a way which we would find impossible to do on the Manoa campus because of the size of the faculty and complexity of the community. And yet the Manoa faculty has contributed to almost every facet of community life—to an extent that, if tabulated, would be overwhelming. Indeed the University reaches through its functioning arms and branches into every segment and community.

**SUMMER STUDY**

The summer session is a self-supporting activity of the University. On the conservative presumption that each mainland student spends at least $100 in the Islands, the summer session brings in approximately 100,000 mainland dollars each year. It has been estimated that half of these students return with their parents at a later date. All in all, our summer session makes an increasingly important contribution to the tourist trade.

Continuing its upward trend, enrollment in the summer session totaled 4,603 students in 1956, as compared with 4,214 in 1955. The total included 875 students (507 undergraduate and 368 graduate) from 42 states, the District of Columbia, and Alaska. California accounted for 333 students and Washington for 83. They were followed by Texas 49, Oregon 33, Illinois 25, Michigan 24, New York 21, Ohio 18, Colorado 16, Indiana and Wisconsin 14 each, and Missouri 13. The foreign students included 14 from Japan, 11 from the Carolines, 8 from the Philippines, 5 from the Marshalls, and 4 each from Palau and Samoa.

An instructional staff of 126 taught 204 classes, compared with 115 teaching 181 classes in 1955.

*Students make astronomical observations with telescope which belonged to the late Dr. Thomas A. Jaggar, research associate in volcanology.*
The largest single class (286 students) was that in Philosophy of Education. Other large classes included Introduction to Government 255, American History 215, Advanced Educational Psychology 197, Life in the Sea 109, Study of Society 109, Tests and Measurements 108, Public School Organization 104, History of the Hawaiian Islands 98, and Human Anatomy and Physiology 93. The one-credit course on Dances of Hawaii was taken by a total of 531 students in 13 sections (one in Hilo).

Education courses had the largest enrollment, with 1,945 students. They were followed by Health and Physical Education 1,048, Psychology 531, Speech 458, History 419, Music 415, English 402, Art 360, Government 325, Economics and Business 305, Mathematics 285, Sociology 259, Zoology 202, Engineering 123, Anthropology 111, and Botany 90.

By way of an experiment, the equivalent of a year course in Elementary Japanese was offered. It was hoped that at least 16 students would enroll. There was a final enrollment of 61. As a result, it was decided to offer Elementary Japanese again in 1957, as well as a year course in Elementary French.

The Excitement of Science ♦ Much concern has been expressed in scientific circles over the acute shortage of young persons properly trained in science. This situation threatens our economic and social welfare, and our national defense as well. It was felt that one way to remove this threat was to make the study of science more attractive and stimulating to high school students by revitalizing science teaching through the introduction of more effective teaching techniques and by encouraging fuller use of local scientific activities as laboratories of study.

With this in mind, the National Science Foundation sponsored a "Teaching of Science Summer Institute" at the University of Hawaii and at other institutions of higher learning. The University was granted $63,700 for this purpose.

... for "malihini" summer student to exhibit her newly gained skill before an appreciative audience of fellow students who are learning Hawaii's distinctive dance.
During the Teaching of Science Summer Institute graduate credit courses taught by recognized research scientists were offered in "Recent Developments" in both the physical and biological sciences. Laboratory demonstrations featured materials readily available at low cost and field trips were conducted to local scientific establishments.

Below, a wondrous world of science is found.

SERVICES SHARED

Both students and faculty members offered scores of well-attended public programs throughout the year. In the freshly renovated old library building, the Art Department opened with great pride its long-anticipated Art Gallery with an interesting exhibit of the work of its faculty. A large and distinguished gathering from the community attended.

The Theatre Group culminated a particularly ambitious and successful season by presenting Eugene O'Neill's *The Iceman Cometh*. During Anniversary Week, the four-and-a-half-hour-long production was broken by dinner served in Hemenway Hall.

The Theatre Group joined with the Music Department in the production of the opera *Don Pasquale*. During the year the Music Department presented several programs, including an Anniversary Concert, a Choir Reunion Concert, and an exceedingly well-attended concert in the new Waikiki Shell in conjunction with the Honolulu Symphony Orchestra. The program, which featured operatic excerpts, was dedicated to the University. A further contribution of the Music Department was the rendition on several occasions of an "Invocation to Lono." It consisted of verse by Aldyth V. Morris based on Dr. Katharine Luomala's "Lono, Essence of Wisdom," set to music by Professor Norman D. Rian.

*The Return of Lono—The Story of Captain Cook's Last Voyage*, by O. A. Bushnell, was published during the year by Little, Brown-Atlantic Monthly Press. The University of Hawaii Press prepared for publication a *Hawaiian-English Dictionary* in the compilation of which the University's Samuel H. Elbert collaborated with Mary Kawena Pukui of the Bishop Museum. *Fear God and Dread Nought*, the second volume of Arthur J. Marder's trilogy on the history of British naval policy in the predreadnought era, was issued in England.
The Aquarium, a popular tourist attraction visited by approximately 300,000 children and adults during the year.

Denizens of the Deep ▲ The Aquarium continued to increase its exhibits of Hawaiian marine life. Several curious creatures were added. Two harbor seals were donated by the Woodland Park Zoo in Seattle and the Vancouver Public Aquarium. A lung fish and an electric catfish were acquired from Africa by way of the Steinhart Aquarium.

In cooperation with the Division of Fish and Game of the Board of Commissioners of Agriculture and Forestry, the Aquarium shipped fish to the New York Aquarium in time for the opening of their new building.

Through the courtesy of the Standard Oil Company of California, tropical reef corals, the gift of Mr. and Mrs. Pat Kananui, were shipped from Wake Island, where the donors collected them.

Halla Hahn, Korean dancer, accompanied on the Chung Goo by Kyung Sik Ko, performs the "Soong Moo" famous classical Korean dance in lecture-recital on Music of the Far East directed by Barbara B. Smith of the Department of Music.

Among public events was a winter series of lectures on World Affairs and a summer session series on a variety of subjects. Two special programs were offered during the 1957 summer session, a lecture-demonstration, "Painting of the Far East," by Dr. and Mrs. Gustav E. W. Ecke, and a lecture-recital, "Music of the Far East," by Miss Barbara B. Smith.
The most dramatic event of the year was the capture of a small pilot whale at Waikiki and its transportation to the Aquarium. It was the first whale to be held in captivity in Honolulu and the fourth to be exhibited anywhere. It attracted 50,000 visitors during the eight days that it survived—an indication of how popular an "oceanarium" type tank might prove to be.

During the year, the Aquarium was visited by over 125,000 children and 145,000 adults, approximately half of whom were tourists. During the 38 years that the Aquarium has been administered by the University it has been visited by three and a half million persons.

Surveys, Bills, and Briefings ▲ The Legislative Reference Bureau drafted some 700 bills and resolutions upon the request of legislators—approximately one-fourth of all measures introduced before the regular session of the 29th Legislature. Staff members participated in presession briefings on legislative problems and assisted committees of both houses in gathering and interpreting data and in preparing or amending bills. Indexes, status tables, and digests of measures introduced before the legislature were prepared for its members and for others interested in the course of legislation.

In addition to the work done during the legislative session, long-term research is conducted between sessions. Results of such research projects are published as regular reports of the Bureau, and are available to territorial administrative departments, and others.

During the year the following research reports were published: Residential Treatment of Maladjusted Children, Jury Fees in Civil Cases, A Study of Extending Unemployment Insurance to Agricultural Labor in Hawaii, A Study of Large Land Owners in Hawaii, Mineral Rights and Mining Laws, A Report on the Administration of Territorial Courts. Assistance was given to the special committee on taxation of the Economic Planning and Coordination Authority in the preparation of its report to the governor.

Students of the University continued to make increasing use of the Bureau's research library (containing some 20,000 items), particularly those studying government, social work, and industrial relations. In all, the Bureau responded to some 1,700 requests for information or research service from government officials, for persons on campus, and from other individuals and agencies, within the community and abroad.

Legislative Reference Bureau staff members gather and interpret data for government agencies, individuals, and community groups. During sessions of the Legislature the Bureau maintains an office at Iolani Palace to cope with requests for information and reports on legislative problems.
RECEIPTS AND EXPENDITURES

SOURCES OF INCOME
FOR EDUCATIONAL PURPOSES
(excluding plant funds)

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territorial Appropriations</td>
<td>$3,330,663.05</td>
</tr>
<tr>
<td>Federal Funds</td>
<td>$836,620.30</td>
</tr>
<tr>
<td>Student Fees</td>
<td>$1,293,008.23</td>
</tr>
<tr>
<td>Sales of services, gifts and grants</td>
<td>$514,428.91</td>
</tr>
<tr>
<td>Total</td>
<td>$5,974,720.49</td>
</tr>
</tbody>
</table>

TYPES OF EXPENDITURES
FOR EDUCATIONAL PURPOSES
(excluding plant improvements)

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
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</tr>
<tr>
<td>Organized Research</td>
<td>$1,151,722.66</td>
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<tr>
<td>Agricultural Extension Service</td>
<td>$656,388.19</td>
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<tr>
<td>Library</td>
<td>$223,813.63</td>
</tr>
<tr>
<td>Services, maintenance, general expense</td>
<td>$1,073,459.27</td>
</tr>
<tr>
<td>Total</td>
<td>$5,823,789.09</td>
</tr>
</tbody>
</table>

Territorial appropriations 55.75%
Federal Funds 14.00%
Sales of Services Gifts and Grants 8.61%
Student Fees 21.64%
Instruction 46.68%
THE EXPLOSION OF POPULATION

"Who Should Go To College?" asked Dr. Cornelius H. Siemens, president of Humboldt State College, in his public lecture. Dr. Siemens deftly sketched the plight of higher education, the source of such grave concern throughout the country. It stems, he said, from the "explosion of population" caused by high birth rates during World War II. This great increase in our young population has swelled the ranks of our high schools. Moreover, increasingly large numbers of our graduating high school seniors desire to go to college. To what extent should it be made possible for them to do so?

Dr. David L. Crawford, third president of the University, answered the question in a report to the Legislature 30 years ago. "The only factors which should be allowed to exert their limiting effect," he wrote, "are, first, the capacity of the individual to respond profitably to the experience and, second, the capacity of the people to pay, either by private or public means, the costs involved."

Today, Dr. Siemens stated, about half of the high school graduates have the ability to benefit from higher education. What about the cost involved? The cost of higher education has doubled since 1940 according to Lawrence G. Dertheck, commissioner of education in the Department of Health, Education, and Welfare. In terms of the nation as a whole, the cost of higher education amounts to 0.6 per cent—less than we spend on tobacco—if we are to give our children and grandchildren their birthright.

Moreover, there is an increasing demand by industry and business for college graduates. We are in the midst of "a revolution in society's attitude toward men and women of high ability and advanced training," writes Dr. John W. Gardner, president of the Carnegie Corporation of New York. In an article in Harper's titled "The Great Hunt for Educated Talent," Dr. Gardner points out that "everyone links the name of Salk and Enders with polio vaccine, but few go on to think of their home bases, the universities of Pittsburgh and Harvard."

Private colleges and universities, Dr. Siemens warned, do not intend to increase their enrollments greatly. This places a staggering burden on public institutions. The problem is more than one of providing physical facilities. Due to the low birth rate during the depression years, faculty members are in short supply at the very time when they are needed most. Moreover, business competes against education for their services.

Universities can offer favorable working conditions. Moreover, the teaching profession is a stimulating and rewarding one. "A larger proportion of people in the teaching profession," writes Dr. Lawrence M. Gould, president of Carleton College, "are doing what they like most to do than will be found in any other comparable group in American life." But when it comes to salaries, higher education is at a disadvantage. Dr. Siemens concluded with the startling statement that in order for colleges and universities to compete successfully with business in 1970, they must raise their salaries to between $10,000 and $30,000.

The University of Hawai'i is confident that the community it serves will be capable of bearing the increased cost of higher education once its needs are clearly stated and understood. This conclusion was shared as regards their own institutions by the college administrators who met to discuss this problem at the meeting of the Western Interstate Commission for Higher Education this year. It was interesting to note that quite as many businessmen, legislators, and nonacademic citizens attended as did educators. The Hawai'i delegation reflected the increasingly broad sense of responsibility for higher education, a subject which has taken on added importance to the nation the more we learn of the success of many phases of the Soviet educational system.
The Challenge ▲ The University is seriously considering the coming increase in enrollment, frequently referred to as a “wave,” implying that it constitutes an emergency that will pass. That is untrue. There will be no recession of the wave. Though the enrollment will eventually tend to level off, it will never recede.

Necessary measures are threefold. First, faculty salaries must be raised drastically in order to compete with those offered by industry and other universities. Second, we must increase our physical plant in accordance with the carefully determined Bachman Plan for Campus Development. The first steps of this orderly and well-considered program already have been taken. In addition to the music building, and an engineering and physics building, now on the drawing board, the University will require a new classroom building, the size of the Gregg M. Sinclair Library, each biennium for many years to come; also military science and agriculture buildings, student residence halls, and faculty housing. Along with these construction activities is an increasingly acute parking problem. A third consideration is the development of teaching techniques that promise to make our instructional program as effective as possible in the face of larger classes and a proportionately diminishing supply of faculty members. Committees are making studies of techniques which have been found to be successful.

None of our problems are insoluble so long as the pressing needs of higher education are understood by the people of Hawaii.
UNIVERSITY OF HAWAII FOUNDATION

One of the most encouraging developments of the year were the first tender steps taken by the University of Hawaii Foundation. The Foundation was established in June, 1955, for the purpose of administering nonappropriated funds for the benefit of the University. It concerns itself with the solicitation and disbursement of funds, opening an avenue for donation by individuals, corporations, and estates, and providing a means whereby the University can take advantage of opportunities to initiate, facilitate, and extend its teaching, research, and public services.

During this first year of its existence, the Foundation made notable progress as an originator of ideas, and as a collector and trustee of funds.

It has provided transportation for faculty members to important professional and scientific meetings. It has helped finance the University's International Geophysical Year activities. It co-sponsored the Second World Orchid Conference. It has accumulated funds for the eventual support of the annual Berry Lectures on Religion. It has managed and begun to develop the Harold L. Lyon Arboretum.

The Arboretum—"Land of Dripping Dew," as the Hawaiians call it—is a monument to the reforestation services of the Hawaiian Sugar Planters' Association and to the man whose name it bears. It is one of the most valuable botanical collections in the Pacific area and a unique laboratory for the teaching of plant science and water conservation through proper forestation.

The University of Hawaii Foundation is at a point in its development that in later years will be looked upon as the most primitive beginnings. I am sure not only of the eventual importance of this organization and the sustenance that it will give to the University in many ways, but also of the soundness of the
Carnegie Visiting Professors

The Carnegie Visiting Professors, whose stimulating presence on the campus was made possible by grants from the Carnegie Corporation of New York, came from nine universities and eight states—from as far south as Florida, as far north as Michigan, and as far west as California. They represented a small women’s college, a large women’s college, and private and public universities of a variety of types and sizes. The professors and their fields and affiliations are listed below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Field</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Armour</td>
<td>Professor of English</td>
<td>Scripps College and Claremont Graduate School</td>
</tr>
<tr>
<td>Cora Du Bois</td>
<td>Zemurray Professor of Anthropology</td>
<td>Radcliffe College</td>
</tr>
<tr>
<td>Lnten E. Grinter</td>
<td>Professor of Engineering</td>
<td></td>
</tr>
<tr>
<td>George Kish</td>
<td>Professor of Geography</td>
<td>University of California</td>
</tr>
<tr>
<td>Boyd R. McCandless</td>
<td>Director and Research Professor</td>
<td>Iowa Child Welfare Research Station, State University of Iowa</td>
</tr>
<tr>
<td>Richard B. Morris</td>
<td>Professor of History</td>
<td>Columbia University</td>
</tr>
<tr>
<td>C. Ladd Prosser</td>
<td>Professor of Physiology</td>
<td>University of Illinois</td>
</tr>
<tr>
<td>Norris W. Rakestraw</td>
<td>Professor of Chemistry</td>
<td>Scripps Institution of Oceanography, University of California</td>
</tr>
<tr>
<td>Loren D. Reid</td>
<td>Professor of Speech</td>
<td>University of Missouri</td>
</tr>
</tbody>
</table>

For Which We Are Duly Grateful

Among substantial grants received during the year were the following:

<table>
<thead>
<tr>
<th>Carnegie Visiting Professorships</th>
<th>Carnegie Corporation of New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>$36,000</td>
<td>$36,000</td>
</tr>
</tbody>
</table>

Direction in which it appears to be moving. I venture to suggest that within 10 years this Foundation can secure for University purposes 10 million dollars.

The Foundation has had no administrative setup other than its trustees and officers. However, a number of public-spirited friends and members of the Foundation have volunteered to devote time to organize and carry on the business of a headquarters for the Foundation. Their initial efforts are being directed to making the Foundation and its objectives better known. I predict that within a decade the Foundation will be a powerful force for good within the Territory and a strong support to the University.

Richard Armour

Cora Du Bois
Charter Day Speakers  International Business Machines  $ 3,000

Geophysics Brochure  Economic Planning and Coordination Authority  2,000

Hawaiian Kingdom  McInerney Foundation  5,000

Industrial Relations Center  Estate of Grace Emily Wills  11,900

Insects of Hawaii  National Science Foundation  20,000

Manoa Arboretum  Estate of Harold L. Lyon  net income

Pacific Studies  Carnegie Corporation of New York  20,000

Philosophy East and West  Rockefeller Foundation  4,000

Research Materials on Pacific Islands  Rockefeller Foundation  30,000

Summer Science Institute  National Science Foundation  63,700

Teacher Training Evaluation  Fund for the Advancement of Education  15,000

The following sources were among those which made substantial gifts and grants:

- Associated Students of the University of Hawaii
- Beta Sigma Phi chapters
- Bishop National Bank
- E. I. duPont de Nemours
- Elementary School Practice Teachers
- Francisco Sugar Company
- Governor's Advisory Committee on Tourist and Industry
- Half-Century Club
- Hawaii Meat Company
- Hawaii Sun Products
- Hawaii Visitors Bureau
- Velsicol Chemical Corporation
- Hawaiian Electric Company, Ltd.
- Kaneko Jelly Factory
- Nutrilite Products, Inc.
- Outdoor Circle
- Puna Plantation Hawaii, Ltd.
- Shell Chemical Corporation
- University Elementary and High School PTA
- University High School Student Fund
- University of California
- University of Hawaii Foundation
- USARPAC Contribution Fund

Individual donors included:

- Mr. Jacob Adler
- Mr. J. Garner Anthony
- Mr. Robert Brilliance
- Mr. Hung Wai Ching
- Dr. Taraknath Das
- Dr. and Mrs. Leland Ira Doan
- Mr. James Fujikawa
- Dr. Katsuuyuki Izumi
- Dean Arthur R. Keller
- Dr. Fred K. Lam
- Colonel T. S. Y. Tong Lao
- Professor G. P. Malalasekera
- Dr. Norman Meller
- Mr. Jack H. Mizuha
- Mr. Fumio Oda
- Mr. Arthur E. Orvis
- Mr. Edwin W. Pauley
- Mr. Richard Penhallow
- Dr. Richard Y. Sakimoto
- Mr. Philip E. Spalding
- Dr. D. T. Suzuki
- Mr. Farrant L. Turner
- Mr. John Wright