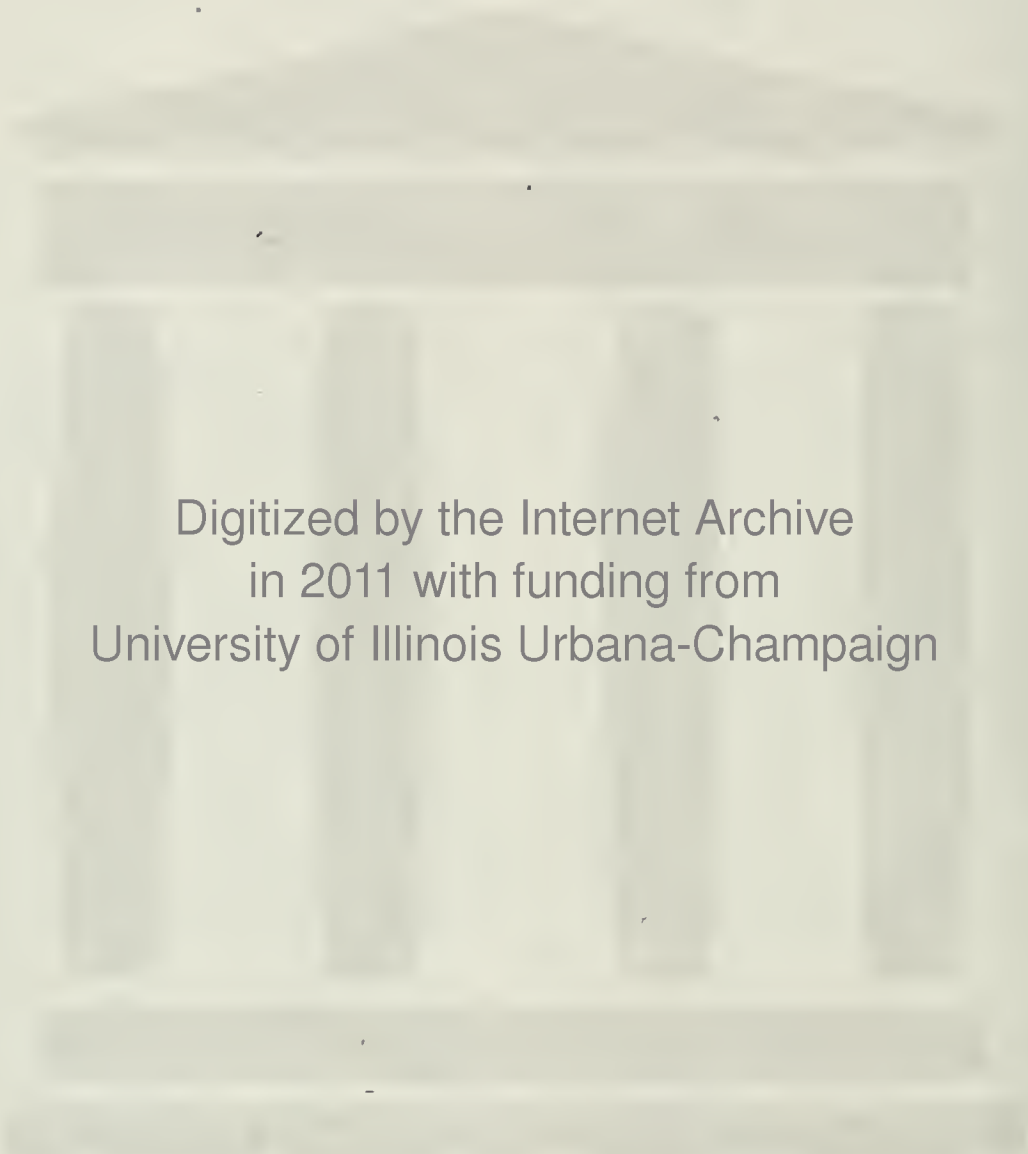
Illinois. University.
Four-year report, 1946-50.



September 29, 1950

UNIVERSITY OF ILLINOIS FOUR-YEAR REPORT - 1946-50

George D. Stoddard

I

Mr. Kenney E. Williamson, President of the Board of Trustees, has asked me to submit a report on the state of the University. After four years, I am glad to do this, conscious of the fact that I am acting as spokesman for several thousand staff members and tens of thousands of students. The record is theirs, not mine.

Even if the account seems long, it will barely touch upon the main achievements of this great body devoted to learning, teaching and public service. It is indeed a privilege to report on recent events, to review major decisions and to look briefly to the future. Few institutions of higher education have experienced so much in so short a period of time - whether for better or worse, time will tell.

The Board is familiar with the patterns of growth at the University of Illinois. It has set the policy and encouraged the moves, step by step, under the leadership of Mr. Williamson and his predecessors, Mr. John R. Fornof and Mr. Park Livingston. The enrollment, during the four-year period, of more than 25,000 veterans brought a dramatic increase in the size of the student body and significant changes in its composition. These conditions called for new staff on an unprecedented scale.

In 1946 two new campuses were established through the combined efforts of University, State and National authorities. Other new physical facilities were sorely needed and some have been constructed. Many new educational and service programs have been established.

September 29, 1950

UNIVERSITY OF ILLINOIS BOOK-YEAR EFFORT - 1950-51

George D. Woodburn

I

Dr. Henry G. Williamson, President of the Board of Trustees, has named me to publish a report on the state of the University. After four years, I am glad to do this, conscious of the fact that I am writing as confidential friend of several thousand staff members and tens of thousands of students. The record is theirs, not mine.

From it the reader gains four, it will hardly be seen upon the main achievements of this great body devoted to learning, teaching and public service. It is indeed a privilege to report on recent events, to review major decisions, and to look briefly to the future. Few institutions of higher education have experienced so much in so short a period of time - whether for better or worse, time will tell.

The Board is familiar with the problems of growth at the University of Illinois. It has met the policy and encouraged the moves, step by step, under the leadership of Dr. Williamson and his predecessor, Dr. Leon D. Power and Dr. Mark Ethridge. The enrollment, more than four-year period, of more than 25,000 veterans brought a commensurate increase in the size of the student body and significant changes in the composition. These conditions called for new staff in unprecedented needs.

In 1946 two new campuses were established thereby the medical efforts of the University, Chicago and Peoria. Other new physical facilities were nearly needed and some have been constructed. Many new educational and service programs have been established.

Before examining the four-year record it may be helpful to ask, What are the aims and purposes of the University? Toward what goals do we strive? The answers to these questions will define the standards by which change can be measured. They will also assist in defining the ways in which the University is related to the State of Illinois.

What Are the Aims and Purposes of the University?

A university - especially a land-grant institution like the University of Illinois - is a complex enterprise that affects the lives of students and citizens in many ways.

The First Goal

First, the University educates its students. This has always been recognized as a prime function and it is not narrowly conceived. A century ago Jonathan B. Turner, a great and ardent advocate of state universities, wrote, "The end of all education should be the development of a true manhood, or the natural, proportionate, and healthful culture and growth of all the powers and faculties of the human being, physical, moral, and social . . ."[1/] The 1945 report of the University of Illinois Committee on Future Programs states, "The University has as its first large responsibility the education of its undergraduate and graduate students."

In its rôle as educator, the University aims fully to meet the needs of young men and women over the breadth of their psychological natures.

Some of the needs of youth are intellectual. Young people need to know and to develop a creative imagination that leads to action.

1/ Turner, Jonathan B., Industrial Universities for the People, Jacksonville, Illinois, 1853.

[illegible] [illegible] [illegible] [

They need to use their minds to full capacity. They need to know the enduring satisfaction that stems from productive effort - to discover the unique effectiveness of learning in human affairs.

Some of the needs of youth are personal. Everyone seeks a strong and healthy body, a well-adjusted personality, and a sense of ability to achieve. Above all else, the college experience is an exercise in self-reliance and self-discovery.

Some of the needs are social. Young people like to make friends, to work and play with others, to become members of groups that try to improve some aspect of living. They seek satisfactions in personal and social progress.

Some of the needs are emotional. It is important to meet members of the opposite sex under wholesome circumstances so as to learn to live together harmoniously. Everyone needs the pleasure and the inspiration that go with literature and the fine arts. Recreation is seen as a part of daily life.

Some of the needs of youth are ethical and spiritual. Since the dawn of history men have striven for a closer relationship to what is enduring. While religious sects are numerous, all agree on the crucial value of beliefs that deepen loyalties; all recognize the essential brotherhood of man. All strive toward a common devotion to truth, justice and morality. When the conditions are favorable, young people respond naturally to these dictates.

The Second Goal

Another aim of the University is to guide the passage of its graduates into adult life. Never before has this purpose been more revealed than it is to-day. The way of life that most of us know and

believe in is under heavy pressure and attack. Many persons over the world are seeking to reorganize society in ways that are ruinous to the beliefs and hopes of free people.

At times in the past, Americans have been a divided people. They have sustained armed rebellion and one terrible war because they disagreed among themselves about what was right and necessary. Instability is no novelty, but it is trying and unpleasant. Its severity can be reduced if educational institutions, particularly the universities, send out an increasing number of graduates who cherish democratic values. These values are spelled out in the historic documents of the United States. They are the essence of our heritage. They are best understood through the general and liberal components of any curriculum.

At the same time a university must recognize a demand for the specialist - for the person who has understanding in a particular field of knowledge and is prepared for a career. As I said at Utrecht:

> "The complete human being - something organically developed out of science, art and humanity - will work for a living; otherwise someone must work in his place. Universities should stop apologizing for this workaday aspect of their programs. Vocational assignment, with or without vocational preparation, is the lot of all non-parasitic men. Education is costly, but not a luxury, and it is not for the precious soul. In any democracy, a liberal education should frankly include the technical, vocational or professional, in so far as such experiences have been organized, documented and generalized. A solid preparation for the economic life is the good earth of liberalism everywhere."

This rôle of the University in inducting able youth into adult life was recognized by the University Committee mentioned earlier: "The task of the University . . . is so to perfect its educational services that it will prepare men and women able to further and to enjoy a community in which they will be more than ever responsible members."

The Third Goal

A third goal of the University is to extend and disseminate knowledge. Many other institutions help youth to meet their needs, but few endeavor to discover new truths - to convert the unknown into the known. The University faculties ask of nature a never-ending series of questions. They explore new relationships, pushing back the frontiers of ignorance and helplessness. Experience has shown there is nothing more practical, in the long run, than the fundamental.

This paradox lies at the heart of research endeavors. There will be no improvements in machines, except as they are based upon known principles. There will be no better ways of teaching, except as they are based upon valid theory.

Knowledge is power only when it is possessed. If it remains in the laboratories where it was discovered or in the mind of the discoverer, it avails little. Dissemination of knowledge enables the many to gain from the work of the few. There are many ways of dissemination: instructing students in classroom and laboratory, providing a library, establishing extension services, cultivating demonstration acres, publishing books and pamphlets, producing motion pictures and radio programs, developing field laboratories and loaning films and recordings. These methods are currently in use. All should be encouraged, and new ways should be developed and tested.

The Fourth Goal

Finally the University encourages the creative arts. To quote again from my speech at Utrecht:

> "Universities . . . can, if they will, put a premium on the creative arts which they have so long admired as a past event. What the microscope and telescope are to visual powers, poetry and drama are to general intelligence. Poetry

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> enlarges the world of human experience, setting up new images and enabling us to feel what we have known, and to know what we have felt. The poet, like the Olympic athlete, does for us what we are too lazy, too pedestrian, too circumscribed to do for ourselves; unlike the admired athlete he improves our marks. Not through watching but through reading we grow, for reading is in itself a vital experience."

Accordingly, the fine arts in any medium are not regarded as casual or ephemeral. Any student blind or deaf to their appeal has missed something that would serve him well throughout life.

What Are the Criteria of Excellence of a University?

A university should reach or exceed all the standards of excellence that reasonable people consider to be valid. The standards as stated are usually divided into categories. Thus the North Central Association of Schools and Colleges has established eleven criteria of institutional excellence:

- A university shall have a clearly defined purpose.
- A competent faculty organized for effective service and working under satisfactory conditions.
- A program of subject-matter offerings geared to its statement of purpose.
- A sympathetic concern for the quality of instruction offered students and clear evidence of efforts to make instruction effective.
- A library which provides the reading facilities needed to make the educational program instructive.
- A student personnel service which is able to assist students to analyze and understand their problems and to adjust themselves to the life and work of the institition.
- Full provision for the performance of all administrative functions by a personnel competent in their respective lines of activity.
- Financial resources adequate for and effectively applied to the support of its educational program.

- A physical plant - grounds, buildings and equipment - adequate for the efficient conduct of the educational program and for the realization of the accepted objectives of the institution.

- A continuous study of its policies and procedures with a view to their improvement.

- A program of intercollegiate athletics to which the same policies are applied in regard to faculty, administration and the management of students as are in force in connection with the other features of the institution.

The University of Illinois meets all these criteria of excellence. It has been accredited since the North Central Association was organized. But for the purposes of this report, it will help to approach the criteria in a somewhat different fashion.

The people who make up a university are the students, the staff (academic and nonacademic) and the administrative officers. Each group is important. The student body should contain a proper share of all the students of college age in the state who can profit from higher education. All able youth of college age in Illinois should be in some college or university. Too often,

> ". . . bright youth are lost sight of in a nation that is short of talent while elaborate facilities and infinite staff patience are brought to bear upon reluctant learners. Certainly we should consider college education for the lower level of students as additive to a full and fine program for the able minds." (Ferment in Education)

For its part, the academic staff should have in it no place for the person who seeks merely to "get by." Distinction in scholarly activities, in research and publication, by itself, is not enough. Every teaching member of the faculty should pursue with devotion the art of teaching. Unfortunately, as I said last year at the University of Wisconsin,

> "The daring is chiefly in the laboratory, studio or clinic and the plodding chiefly in the classroom. Somehow, we who share the blame must find a way to get each student to think for himself while listening to and working with others. We must give

a lift to the art of teaching, encouraging in the quiet classroom the all-in-all participation so often found elsewhere."

Similarly, the nonacademic staff of the University should possess a high degree of competence and loyalty in its chosen work. It contributes significantly to the aims of the University. Correct manuscripts, accurate records, a constant flow of power and heat, attractive surroundings and the continuous operation of complex machinery - these and countless other responsibilities are an integral part of University life.

A good administrative staff is like a catalyst. Things are not self-made and events do not "just happen." A characteristic of leadership is that it creates freedom - an essential element in a university. As scholars are free to follow wherever inquiring minds may lead, knowledge is increased. Another characteristic is the welding of diverse interests and personalities into a team that will work as a unit. A third, and perhaps the most important factor in administration, is a sense of the high purposes of the University and a zeal for their accomplishment.

The external physical plant of the University of Illinois is seen readily as one strolls around the campus. What is concealed from the casual eye is more important. To choose at random: powerful machinery to convert coal into electricity, intricate electronic computers, models of a skyscraper, incunabula in the library all contribute individually to the fulfillment of the aims of the University; these are but four kinds of equipment. As of July 1, 1950, our inventory lists carry 250,000 items!

In Ferment in Education I proposed that an educational program be based upon a matrix theory of education.

> "The educational matrix centers in an area of specialization. It needs stimulation. Intellectual interests that are derived from reading or from contact with professors may be as firmly established as those crystallized in early life. A passion for academic learning in a given field may have wedge-like beginnings. . . . About this central section there can easily be placed a pattern of related studies. . . . This brings us to the third concentric circle - the area of common knowledge, the area that forms the basic content of elementary and secondary education. It is clear that common knowledge needs to be refreshed at the higher levels. . . . The fourth area in the matrix scheme of education is given over to recreation."

A program of education can be based on such a theory, but there are other theories. What counts is the attempt to improve the curriculum through the use of theory.

Whether the University is separated into the eleven parts indicated by the North Central Association or into four layers of a matrix, the whole may be lost in looking at details. What is the whole like? One way to answer this question is to examine two of the products of the entire institution. Is it turning out research in many areas of human knowledge? If so, it is well on the way to becoming distinguished. It has another product even more important. It must send forth graduates not only capable of understanding the world, but also willing to serve their fellow men. It cannot evade the responsibility of answering the question, Knowledge for what purpose?

How is the University related to the State of Illinois?

Education releases power. It spreads knowledge among the people. The early colonists in New England cut down the virgin forests and destroyed the shallow soil until few natural resources were left. Except for the sea and the ships that brought trade, nearly all that could be turned into wealth was gone. Power in the national life was achieved because the early settlers believed in education at all levels.

Their schools and colleges have made the people of the region strong and they have done well by the youth who come to them from afar.

In the great fertile state of Illinois the earth yields food in abundance for people in all parts of the world. The coal and oil give the energy that moves the wheels of many factories and carries trains over thousands of miles. Provost Coleman Griffith has referred to the Midwest as "the greatest cultural and economic area in the world." He states that "if its grains, minerals and men had been taken out of the world's economy at any time since the turn of the century, the whole course of peace and war would have been changed."

The University can release more strength as it creates the power of knowledge and spreads it among the people. The colleges and universities of Illinois are keys to the future of the State. The state university rightly should be a leader among them, initiating educational advance. The relation between it and other institutions of higher education, like that between it and the state, should be one of dynamic interaction. Each should lend its strength to the other.

The cause of freedom will be advanced as citizens and communities gain in knowledge and character. Will they set for themselves goals that conform to the tremendous needs of the Republic - of the Republic in time of danger?

II

MAJOR PROBLEMS OF THE FOUR-YEAR PERIOD

One-fifth of all the degrees earned by students of the University of Illinois during its 82 years have been granted in the last four years. The grand total is 105,959 - 21,868 being awarded between July 1, 1946, and June 30, 1950. The 4,720 graduate degrees given during the same period represent one-fourth of all the University's advanced degrees. In June, 1950, the number of graduate students (4,162) exceeded the total enrollment in the University in 1914.

During the war period the University of Illinois was among the leaders of the Nation in its training programs for the armed forces. The "re-conversion" indicated above was possible because the University staff, the Board of Trustees, the General Assembly and the Governor of the State were united in believing that Illinois should meet its post-war educational obligations. Particularly they were agreed upon a policy that was almost an article of faith, namely, that no returning veteran should be denied a chance to study at his State University if he could profit by college work.

Between September, 1945, and September, 1946, student enrollment more than doubled. The number of freshmen entering in 1946 - a total of 12,000 - exceeded the total enrollment of the University a year before. In the fall of 1947, nearly 16,000 veterans entered the University at its various campuses.

The great bulge in enrollment called for a crystallization of policy and for action on many levels. These problems were faced:

- To recruit the size and quality of staff needed for these young people and to retain this staff under highly competitive conditions.

- To develop the campuses of the University so as to take care of as many students as possible without sacrificing high quality.

- To secure and equip other campuses when it became apparent that emergency expansion at Urbana-Champaign would not permit the University to handle the expected enrollment.

- To house the new students on a campus where student housing had not been adequate for half as many students.

- To house the new staff members who were being asked to come into a community where rental housing was almost nonexistent.

- To take care of the special educational needs and adjustment problems of veterans.

- To take care of the health, counseling and orientation needs of all students in a University grown large and complex.

- To revise and expand courses and curricula in order to meet the new postwar conditions.

Staff Salaries and Wages

The young men and women of Illinois are entitled to look to their State University for as good an education as they can get anywhere. That kind of education requires an excellent staff, working under the best possible conditions in all divisions and types of services. It was, therefore, essential to revise salaries, wages and employment attractions.

Even before the war, the rising cost of living had drastically cut the real income of the teaching and service staffs. In average salaries, the University of Illinois was below the leading public and private universities.

With heartening support from the General Assembly, an across-the-board adjustment in salaries and wages was made during 1947-49. The formula called for a 30 per cent increase on the first $4,000, a 20 per cent increase on the next $1,000 and a 10 per cent increase on the next $1,000. First proposed by the local chapter of the American Association of University Professors, it was cited over the country as a model way

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of adjusting to the cost-of-living index. However, a cost-of-living adjustment creates inequities by failing to give recognition to merit and exceptional achievement. Here again, with the support of the General Assembly, selective adjustments have been made in order to reward excellent teaching and to develop large areas of work. The University now compares favorably in salaries with the large land-grant institutions and with most of the private universities.

For a number of years, the Board of Trustees has pursued a most forward-looking policy on salaries, wages and working conditions for the nonacademic personnel. This plan also has served as a model elsewhere.

Later in this report I shall say something about the quality of staff additions. Here let me simply report the numbers, expressed in full-time equivalents:

In 1945-46, 1,528 academic staff members; in 1949-50, 3,144.

In 1945-46, 2,295 nonacademic staff members; in 1949-50, 4,099.

Physical Development of the Campuses

In 1940-41, the physical plant of the University - offices, classrooms, laboratories, space and facilities for other services - was large enough for about 13,000 students. When the great wave of "GI" students broke on the campus and the enrollment threatened to reach 28,000, drastic action was required.

The first step was to scan all existing space in the buildings on the Urbana-Champaign campus and at the Chicago Professional Schools. Halls, basements, attics and storerooms were converted into classrooms, laboratories and offices. The entire program of class schedules was

revised so as to maintain classes from seven o'clock in the morning until late evening. It was decided to avoid wherever possible large, unwieldy classes.

By 1949 this plan was paying substantial dividends in educational effectiveness. At that time 4,565 undergraduate classes were listed for the Urbana-Champaign campus. Of this number, 6.7 per cent had nine or fewer students; these were thesis, honors and senior courses in technical and special fields. Slightly more than 30 per cent of the classes, mostly at the senior level, enrolled between 10 and 19 students. Thirty-seven per cent were at the best size for regular types of instruction, enrolling from 20-29 students. About 13 per cent of the classes had from 30-39 students and 5.4 per cent had from 40-49 students. Only 7 per cent of all undergraduate classes enrolled more than 50 students.

At the graduate level, groups of more than 10 or 15 are often too large for effective work. Over 39 per cent of graduate classes enrolled fewer than 10 students and nearly 32 per cent enrolled from 10-19 students.

The second step was to expedite plans for critically needed buildings and to ask the General Assembly for funds. The Electrical Engineering Building, the Mechanical Engineering Building, the Chemical Engineering Building, the Physics Research Laboratory, the Lincoln Avenue Residence Hall for women and a large unit of the staff and student apartments were completed on the Urbana-Champaign campus. In process of construction are the Hospital wing in Chicago and buildings for Veterinary Medicine and Animal Science at Urbana-Champaign. The Hospital addition of 400 beds and the proposed College of Pharmacy addition will make it possible substantially to increase enrollments in Medicine, Dentistry and Pharmacy. The construction of a six million dollar steam plant was

started in 1950 under the name of the Medical Center Steam Company. This plant will serve at a low cost the Professional Colleges, buildings of the State Department of Public Health and the Veterans Administration and other nonprofit medical institutions. It will make the Chicago Medical Center a cleaner and quieter place.

Staff members co-operated fully. They placed their desks in corridors and many are still there. They shared offices and laboratories. They taught at unusual hours. But it was apparent, even in 1946, that no amount of good humor and sacrifice, no feasible use of space, could take care of the flood tide of enrollment on the existing campuses.

It was necessary to look for new campuses on which to create new divisions of the University.

Navy Pier and Galesburg

A search over the State brought into focus the Navy Pier in Chicago, where thousands of men had received specialized training during the war, and the Army's Mayo General Hospital on the outskirts of the City of Galesburg. A lease for the Pier was negotiated with the City of Chicago. Within a few months it was redesigned and equipped and ready to operate as an undergraduate division of the University of Illinois. The Army made the Mayo plant available to the State, and the University operated it for three years as a second undergraduate division.

The speedy conversion of these properties into full-fledged University divisions is an exciting story in higher education. The Galesburg Undergraduate Division was literally made in a month - from September 18 to October 15, 1946. In that time it was necessary to provide every facility of a resident college - dormitory equipment, food service, recreation, laboratory equipment, library, health services and,

most important of all, a teaching staff. Galesburg was closed in June, 1949, when the peak of GI enrollment had passed and the State had other more pressing needs for it. This facility enabled 2,940 different students, most of them veterans and some of them wheel chair cases, to begin their college careers.

Navy Pier served a greater area and met a greater need. Its fall enrollment is generally around 4,000 students, almost all of whom live at home, thus eliminating the housing problem.

The popularity of the Chicago Undergraduate Division reveals the continuing pressure for a four-year branch of the University of Illinois in Chicago. It has been pointed out that half the population of Illinois lives in the Chicago area. The establishment of a permanent branch, however, will depend on finances - on securing a new staff, a campus and an adequate plant. Navy Pier, owned by the City of Chicago, lacks a campus and is not fireproof. It is not a desirable setting for a permanent four-year branch of the University whose ultimate population might be 20,000 students.

Housing

Before the war, Illinois ranked tenth in the Big Ten in student housing. In 1946, housing was the worst bottleneck. Lack of housing, even more than lack of classroom space, had forced the University to look toward other campuses. The University could house in its residence halls less than 1,000 of the 20,000 students seeking admission at Urbana-Champaign. The Skating Rink, the East Great Hall of the Stadium and the Gymnasium Annex were converted temporarily into men's dormitories. Through the assistance of the Federal Housing Authority, temporary housing units were constructed during 1946-47 for 320 student families, 1,264

single men students and 49 single women students. These barracks-type dwellings were not pretty, but they had roofs, they sheltered beds and study tables, and they could be made to look attractive inside. The Lincoln Avenue Residence Hall completed in 1949 added permanent housing for 548 women, and the first units of the Student-Staff Apartments furnished housing for 50 student families. All this took care of only a small percentage of the need, but with help from fraternities, independent groups, private housing directors and apartment owners, it meant the difference between keeping a promise to Illinois veterans and not keeping it.

Staff housing was quite as desperate as student housing. There were few houses for rent in Urbana-Champaign in 1946 and the houses for sale were often poor bargains. This was the situation we faced in persuading faculty families to move out of good housing elsewhere and come to Urbana-Champaign. The University had to take emergency action or give up the attempt to secure an adequate faculty for the returning GI's. With the help of the Federal Housing Authority, 165 temporary barracks-type units were constructed for staff use. Seventy-seven prefabricated National Homes were installed and 22 houses were purchased for staff occupancy. In 1949, the University financed and completed 30 houses at Race and Florida.

Staff housing by the University is intended as a stopgap. The new faculty member is expected to occupy University quarters for only a few years. The temporary units will be removed as soon as possible. The National Homes and the houses in the two cities are being offered for sale to their occupants or to other staff members. The Student-Staff Apartments will be assigned as soon as feasible to married students. The University policy is not to stay in the rental housing business beyond

the time of emergency, except in cases where the houses purchased are located in areas of campus development.

Student housing remains a severe problem. Through this fall we have succeeded in supplying only 643 permanent student housing units. The 1,633 barracks-type units will soon reach the end of their usefulness.

Studying the housing problem, the University was instrumental in securing an analysis of the Urbana-Champaign housing market made in 1948 by the Real Estate Research Corporation of Chicago and financed by the Housing Authority of Champaign County. Through its membership in the Community Development and Housing Council, and a contribution of $20,000, the University also encouraged the formulation of a master plan for this community. The studies were begun in 1948 and are now nearing completion. A study of staff housing requirements was completed in April of 1949. It outlines the anticipated needs through 1955. Another survey, completed in November of 1949, is the basis for recommendations regarding construction of Men's Residence Halls. These studies are being used as guideposts in an attempt to relieve the housing situation.

Housing, in short, is an ever-pressing problem that can be solved in only one way - new construction.

Special Provisions for Veterans

A total of about 25,000 different veterans have been in attendance at the University of Illinois since September, 1946. A promise was made to them and to the people of the State that those who were qualified would have the privilege of going to college. This promise has been fulfilled.

The basic University agency for dealing with veterans has been the Division of Special Services for War Veterans. This Division alone

has granted 2,582 degrees based on programs of study that were tailor-made to fit the needs of the persons concerned. Other veterans have continued their education in the regular schools and colleges of the University. Nearly 14,000 veterans of World War II have received degrees thus far.

We have seen how housing facilities were provided, especially for married veterans. A coffee house with regular meals set up in cafeteria style was opened on the south campus. A hobby shop equipped with machine tools and sewing machines was available for veterans and their wives and a professional supervisor was on duty five days a week. The offices created for veterans assisted them in securing benefits, solving subsistence problems, acquainting them with directives from the Veterans Administration, finding employment for their wives and finding places to live. A fully equipped nursery school, with a staff of nine trained teachers, a director and a nurse, was opened for the children of veterans.

General Services for Students

Special services, however, are not restricted to veterans. The parents of students demand, and good education requires, a variety of special services for students, veteran or not. These include health services, counseling and general orientation in a University community.

Accordingly the Office of the Dean of Students has been expanded in order to provide assistant deans of men and women, counselors for the residence halls and temporary dwelling units and advisers on extra-curricular activities.

The Health Service Station, after two years of intense study, is planning to offer a full-scale program in public health, preventive medicine and emergency service.

The Student Counseling Bureau now renders special services to about 2,600 students per year.

The High School Testing program reaches more than 46,000 high school juniors and seniors per year. The results of tests and reports are supplemented by an effective Freshman Week program so that a beginning student may find his right place in the University.

Associate and assistant deans have been added to the College and School offices in order to provide educational guidance for the individual student. In many divisions these officers are working with student councils and committees.

Reading, speech and psychological clinics are open to any student who requests aid in an effort to improve his study habits or attitudes.

Some departments have developed orientation weeks at which time lesson plans are reviewed, methods of teaching are practiced and the special needs of the students are mapped out.

Courses and Curricula

The bone marrow of a university is found in its courses and curricula; here teachers and teaching activities develop the cells on which ideas thrive. Here is where students grow in mental power.

In 1947 and 1948, every course and curriculum in the University was reviewed, brought up to date and reclassified in terms of its place in the educational experience of students. This is a considerable faculty accomplishment in view of the number and variety of courses offered in a large university. This reform was guided by principles tested in many institutions. Thus the first two years are considered basic in mastering the tools for advanced work. They are years of testing and maturing the

learner, stabilizing his motives and interests and giving him the general and specialized knowledge he will need later.

The second two years are devoted to majors and minors. For most students, they mark the end of formal education. The courses are more specialized and the distinctive achievements of staff members bring the near-graduate closer to the frontiers of knowledge.

The trend is toward an increasing amount of work in general education. In many divisions it is also toward a firmer union between the last two years of college and the first year of graduate work.

In any event, all members of the staff are, or should be, deeply concerned with the central questions: What is to be taught? How should it be taught? A major study, now in process, of programs of study for the education of women is one example of the steady search for the right answers to these questions.

III

PROGRESS IN TEACHING AND RESEARCH

The last four years have seen intense reviews of teaching and research in all areas of the University. The comprehensive divisions of academic activity are:

(1) The physical sciences and technology.

(2) The life sciences, agriculture and health.

(3) The social sciences, education and law.

(4) The humanities and the fine arts.

In each of these great areas there has been extraordinary progress; this we owe to staff members who are highly competent in their chosen fields. Some of these men have been at Illinois for a long time; others have come here within the last four years. To an already distinguished faculty we have been able to add nationally known experts in many fields - for example, in the genetics of corn and of cattle, in mathematics, statistics and machine calculation, in architectural design, in physics, chemistry, physiology and geology, in clinical and educational psychology, in the practice and philosophy of education, in economics and business management, in insurance, international finance, and labor relations, in dramatic production and staging, in the theory and practice of communication, in veterinary pathology, in food technology, in medical chemistry, in musical composition, in Latin-American culture - to name a few that come to mind. Other experts are working in areas classified as secret by the armed forces.

Physical Science and Technology

The Big Betatron

On February 24, 1950, I received a dramatic announcement from Professor Donald W. Kerst, the inventor of the betatron, as follows:

> "We obtained a beam of radiation on the very first trial, Wednesday afternoon, February 15, 1950. Tests the next day showed our electron beam to be so intense that it will exceed all others in this country in producing radiation. We expect, therefore, to carry on research here that can be done nowhere else. On subsequent brief trials the beam has been pushed upward to higher and higher voltage and we are now approaching the full operation point of 300 million volts. We are delighted that the instrument has come to life immediately on the completion of the 15-month assembly period, because other accelerators are requiring periods exceeding a year to get a beam."

The betatron began as pure research at the level of mathematics and abstract physical concepts. Computations led to walls of concrete and lead, to magnets and a source of electric power - all in one functioning machine. The process of construction was itself a rich vein of teaching material to scores of advanced students. Long before the big betatron had been completed, a smaller unit had been constructed and put into service in the study of cancer and other medical problems.

The basic and the applied, the scientific and the technological, the master and the student - marched forward together. This is an illustration of progress in a university.

Engineering

Mathematics, physics and chemistry are the principal sciences that support engineering technology. The Nation has long known the excellence of these three departments. I have been told by a man who should know, himself a leading chemist of this century, that the Chemistry Department of the University of Illinois is the best in the United States. Similarly the Physics Department is near the top and mathematics gains rapidly.

Moreover, the engineering sciences, in their own right, have moved forward in research, instruction and public service.

The most notable improvements in physical equipment have been the addition of the Mechanical Engineering Building, the Electrical Engineering Building and the Physics Research Laboratory. Much equipment for instruction and research has also been added, some of it built on the design of members of the staff. In many instances the shop facilities of the departments involved have been used.

There has been a marked expansion in the co-ordinated fields of research and graduate study. The Electrical Engineering Department has developed a program covering the field of vacuum tubes, antennas, radio direction-finding, ultrasonics, infra-red, semi-conductors and power line analysis. The vacuum-tube laboratory is especially well equipped. The number of graduate students in electrical engineering last year exceeded 200, and 103 students received advanced degrees.

Similarly, in the Department of Mechanical Engineering, the entire undergraduate program has been revised, and new courses and programs have been developed in the graduate field. The graduate enrollment has increased to over 80. The co-operative research program, sponsored by the National Warm Air Heating and Air Conditioning Association and the Institute of Boiler and Radiator Manufacturers, has made noteworthy contributions. The Civil Engineering Department has continued to be the leading department in its field. The scope and breadth of its research work is common knowledge among engineering firms over the country.

In addition, the Engineering College has several committees at work studying how to make our graduates better prepared as citizens as well as technical experts.

Chemistry and Biochemistry

In the Department of Chemistry almost the whole range of chemical events is studied and taught. There is a world-wide demand from other institutions, from industry and government for graduates of this Department. Its researches are notable, some of them - on amino acids, synthetic rubber and processes in chemical engineering - having played an important part in the war effort. For the eleventh time in 16 years, a graduate of the division of chemical engineering has received a first prize from the American Institute of Chemical Engineers. Members of the chemistry staff are literally loaded with honors!

The jump from basic studies in the field of chemistry, whether on the Urbana-Champaign campus or in Chicago, to health and the profession of medicine is easily made. The division of biochemistry at Urbana has been extremely productive. In the Department of Biochemistry in the College of Medicine, laboratories and courses of instruction have developed rapidly.

The science of chemistry is being applied steadily to the main source of all food - the earth. The University continues to lead in the study of soil fertility. Last year nearly one-third of all the soil testing in the United States was done in Illinois - chiefly in the 80 farmer-owned county soil testing units under the direction of the University's central laboratory.

Geology and Geography

Long steps forward have been made in the last four years by the Departments of Geology and Geography. There has been added to structural and descriptive geography an emphasis on the values of these sciences to commerce, industry and military affairs. These two departments have

led the way in surveying teaching materials, dropping out topics which, because of the changes in world events, had a low priority.

By a fortunate arrangement, the University now has access to a most important geological area. It has established a summer laboratory and teaching unit at Fort Lewis in southwest Colorado. New forms of co-operation with the Natural History and Geological Surveys likewise have added to the vitality of teaching and research in these basic areas.

Aviation

The Institute of Aviation, an agency that unites many divisions of the University into a single task force, has completed its fourth full year of operation.

During this time it may be noted that:

(1) The aircraft maintenance curriculum has been developed.

(2) A charter air service for University staff members has been established.

(3) The "Illinois Plan" for private pilot flight instruction has been developed.

(4) Tests have been constructed which make the University the only school in the United States permitted to give its own commercial pilot written examinations.

(5) All possible surplus equipment which could be used by the Institute has been obtained.

(6) The airport has become a "going concern."

(7) The public services of the Institute have been extended.

(8) Co-operative aeronautical research has been intensified.

(9) Extension publications have been increased.

(10) Extension education and information by conference and radio have been developed.

(11) A fleet of University-owned aircraft has been maintained.

Air transportation involving 637 trips amounted to 391,122 passenger-miles in 1949-50. (The mileage was 68,000 in 1946-47, 128,040 in 1947-48 and 292,318 in 1948-49.)

The Life Sciences, Agriculture and Health

The three broad areas - the life sciences, agriculture and health - are allocated to many different departments and colleges on different campuses. Nevertheless, they are closely allied with one another. Thus the production of foods goes back to the chemistry of soils, to genetics and breeding, to the rôle of bacteria, viruses and photosynthesis in all life processes. It calls for engineering, especially in the food processing stages.

Bacteriology

Because of war-born changes in problems, points of view and methods of work, it has been feasible completely to reconstruct the Department of Bacteriology. Five major appointments have been made. Outside observers state that the University has created a strong department. Extensive research is under way in enzymes, virology and in other phases of microbiology.

Physiology

The Department of Physiology, during recent years a branch of the Department of Zoology, has now been organized as a separate unit. All courses of instruction have been revised and a new program of research has been set up. Studies are being made of the physiology of respiration, of cell growth and development, of the primary conditions of physical fitness and of the effects of pressures and temperatures on reactions. At a basic scientific level, the Urbana-Champaign campus

can supplement and support the distinguished work in physiology at the medical level in Chicago.

Botany and Plant Breeding

The Department of Botany has become a nationally recognized center for research in photosynthesis and cytogenetics. These are the areas in which basic questions are asked about the behavior of cells during reproduction and under the influence of sunlight. As so often happens, the enthusiasm and drama of research have brought about a marked change in the contents of courses and in teaching effectiveness.

This basic program supports and is fed by field studies in agriculture. There is, for example, the current corn breeding program of the Department of Agronomy. Plant breeders are trying a new drug called maleic hydrazide in their attempt to produce a male sterile hybrid and thereby eliminate detasseling in seed corn production. (Detasseling in Illinois alone costs about $1,500,000 each year.)

Genetics and Breeding

A great advancement in teaching and research is found in genetics and breeding. Some of the basic work, at the level of the cell, is carried on in the Department of Botany. This work is closely related to work in genetics and to field studies of breeding in the Departments of Animal Science and Dairy Science. It is reported that the number of Illinois dairymen who profit from the production testing of their cows has doubled in the past four years. Expansion of the artificial breeding program, supervised by the University, has been still more rapid. Much research is directed toward an integrated attack on problems related to the economic production of milk. Illinois staff members presented more reports of scientific work at the annual meetings of the American Dairy Science Association than any other group.

Public Health and Preventive Medicine

In 1949-50, after an intensive review of facilities and personnel, a Department of Public Health and a Department of Preventive Medicine were created at the College of Medicine. Chicago, Cook County and the State of Illinois offer one of the best field laboratories in the world for training in public health.

The University of Illinois graduated its first nurse in June, 1950. This event coincided with the establishment of the University of Illinois-Cook County School of Nursing. This new service was augmented by the development of an affiliated program for hospital schools of nursing.

Medical Research

The Aeromedical and Physical Environment Laboratory has been constructed at a cost of $400,000. It has already led to the execution of Army Air Force contracts in the amount of $60,000.

A 25-million volt betatron was installed on the Chicago Professional campus in January, 1949, at a cost of approximately $150,000. Equipment worth $20,000 was provided by the American Cancer Society and the sum of $30,000 for grants-in-aid was received from the National Cancer Institute. Experimental treatments of high promise are going on.

The researches in the College of Medicine on peptic ulcer, high blood pressure, mumps, typhoid carriers, mental disease, epilepsy, rheumatism, allergy, bone diseases and nephritis are noteworthy. The increase in research activities in the Chicago Professional Colleges is indicated by the fact that a total of approximately $600,000 for grants-in-aid to research was made in 1949-50 - more than five times that made in 1946.

Public Health and Preventive Medicine

In 1949-50, after an intensive review of facilities and personnel, a Department of Public Health and Preventive Medicine was created at the College of Medicine. Thereby, Cook County and the State of Illinois offer one of the best clinical laboratories in the world for studying in public health.

The University of Illinois completed its fifty-year, $50,000,000 Twenty Years of Progress. This new service was announced by the development of a multi-purpose project for hospital, medical, nursing.

Medical Research

The Research and Medical Environment Laboratory was constructed at a cost of $1,000,000. It has already led to the discovery of important facts contained in the amount of $2,000,000.

A $5-million cell between was inserted on the Chicago Medical campus in January, 1950, at a cost of approximately $10,000,000. Equipment worth $20,000 was received by the American Cancer Society and the sum of $20,000 for research was received from the National Cancer Institute. Experimental treatments of such persons are given on.

The researchers in the College of Medicine or public water, high blood pressure, vascular, coronary artery, heart disease, epilepsy, rheumatism, allergy, bone disease and radiology are noteworthy. The increase in research activities in the Veterans Professional Services is indicated by the fact that a total of approximately $400,000 was granted-in-aid to research and made in 1949-50 - more than five times that were in 1944.

Postgraduate Education

With the financial assistance of the Kellogg Foundation, the Colleges of Medicine and Dentistry have conducted extension and post-graduate courses on a state-wide basis.

Pharmacy and Dentistry

For some years, the staff of the College of Pharmacy has been at work on courses and curricula, on the problem of securing essential drugs from natural sources and on the development of research programs for pharmacists. This was done in the interests of safety, purity and high professional standards in the handling of prescriptions. The first steps have been taken toward a doctoral program.

The College of Pharmacy has been designated by the American Society of Allergy as the home of the only authentic herbarium of North American plants and pollens. The Drug Plant Experiment Station near Lisle, Illinois, is an active center of plant breeding for drug bearing plants. One of the goals is a safe stockpile of plants yielding rare drugs for use during national emergencies.

The College of Dentistry has devoted itself to experiments in methods of teaching and to the development of the arts and techniques of dental surgery. An attack is being made on the cause and prevention of dental caries. The investigation of the prevention of dental caries by ammoniated dentifrice among school children was initiated two years ago and the findings will soon be announced.

Animal Science and Veterinary Medicine

The Department of Animal Husbandry has been divided into the new Departments of Animal Science and Dairy Science. Among other researches in Animal Science, the staff has been conducting experiments

on the growth requirements of young animals. Lately it has reported that a group of 20 experimental chicks reached an average weight of one pound at four weeks of age. This weight is about twice that which has long been considered normal. Research with experimental rations under controlled conditions has also led to the doubling of the growth rate of young pigs, with some lots reaching an average weight of 70 pounds at eight weeks of age.

The new veterinary medicine building will be completed next year. It will be one of the finest buildings to be found in the 16 veterinary colleges in the United States. Utilizing temporary housing and facilities, the College enrolled 24 students in 1948 and 24 additional in 1949; this year, 34 new students will be admitted to the 6-year course of instruction. A large number of nonprofessional students receive training in courses offered by the College of Veterinary Medicine.

Food Technology

A new Department of Food Technology is actively at work. It was created to train students, conduct research and otherwise serve the food processing industry. With respect to both magnitude and diversity, the State of Illinois ranks near the top in the largest of all manufacturing industries - food processing. The new department includes all dairy manufacturing activities. Food technology work is in the "tooling-up" stage - in chemistry, microbiology, processing and engineering. A pilot plant is nearing the operating stage in temporary quarters.

Social Science, Education and Law

"The proper study of mankind," said Alexander Pope, "is man." In a sense, the only University study is man. Telescopes are pointed at the skies and electron microscopes at infinitesimally small things in order to make a contribution to human understanding. The great machines in Talbot Laboratory smash cement blocks and bend steel girders in order that we may find out how to build stronger buildings and bridges. The University's 5000-acre Dixon Springs Experimental Farm in southern Illinois is operated so that we may get better sustenance from the earth. Every program of the University, in one way or another, is expected to push back the horizon of knowledge and to improve the conditions of life.

But the area primarily charged with studying human structures and behavior is the social sciences. Here is centered scholarship and teaching about mental and emotional behavior (psychology); social behavior (sociology); political behavior (political science); economic behavior (economics and commerce); the origins and development of culture (anthropology); how man learns and may be taught (education); the laws that govern in society; communications and special social problems such as labor and industrial relations. This is an important area of any modern university. In a state university, especially, social sciences should be strong.

Space permits only a few illustrations of what is happening in this vast area.

In the College of Commerce and Business Administration a study of the educational program has resulted in a substantial modification of the undergraduate curriculum. The emphasis is on liberal education, on a wider range of choices available to students, on raising standards of performance and on adjusting the professional part of the curriculum to

the changing environment. Another result of these studies has been the adoption of a program leading to the Ph. D. in Business and a new 4-year curriculum in secretarial training.

A new division, the Business Management Service, has been established to provide further public service activities and to serve as liaison between the world of business and the teaching of business. During its 2½ years of existence, the Business Management Service has held 40 conferences of businessmen with a total attendance of approximately 3,700. It has sponsored 23 extension courses in business subjects, with 850 adult students enrolled and has issued 22 popular publications.

The Department of Economics has substantially improved its rating among the economics departments of the country.

A notable development in research has occurred in the College during the last few years. A recent inventory listed over 100 separate research projects in progress, and research funds in the College have been augmented by grants from foundations totaling $150,000.

In the face of a nation-wide shortage of well-trained teachers, I can report life and vigor in the professional study of education at Illinois.

The University-wide program of teacher education has grown from a series of temporary procedures to a well-integrated organization which was approved in 1949 by the University Senate. It is unique in its co-operative pattern, in the opportunities afforded to students and in its potentiality for state and national leadership. Through this organization, which is spearheaded by the University Council on Teacher Education, all phases of teacher training have been evaluated and improved. Assistance has been made available to high school students who are

considering teaching as a profession. Counseling services have been provided for students who enter a teacher training curriculum. Each of the 19 four- and five-year curricula approved in 1945 has been modified and, in addition, 10 new curricula have been formulated and approved, including preparation for teaching in an elementary school and teaching handicapped children.

The placement service has been vitalized and a follow-up division added. This latter division, established only a year ago, has developed working contacts with 1,114 graduates of the University. Enrollments in undergraduate teacher training curricula have increased from 1,500 in September, 1946, to 2,334 in September, 1949.

The revision of the undergraduate program has resulted in an improved series of courses, student teaching on a full-time basis in selected schools throughout Illinois, and more functional work in educational psychology.

The graduate program of the College of Education has also been modified extensively to meet, in a more meaningful and individual manner, the needs of persons who are preparing for professional work in education. The number of graduate students with majors in education has increased 245 per cent during the past four years. Of the 10,518 different graduate students registered in the first and second semesters of 1949-50 and the summer session of 1950, 4224 had majors in education.

The staff has been increased by 100 per cent during the past three years. The newer appointees and persons already on the staff have rapidly developed into an effective team. During the past year alone, the staff published 60 research reports and 53 books or substantial pamphlets. Twenty-two members of the staff occupied important positions in professional organizations.

Members of the staff have been leaders in the Illinois Secondary School Curriculum Program. This program, sponsored by the State Superintendent of Public Instruction, has won national recognition. Three hundred school systems in Illinois are presently participating in this Program. Six-sevenths of the school principals of Illinois and approximately 8000 teachers and laymen have attended one or more workshops sponsored by the Program. In addition, the staff of the College completed, during the past year, 24 surveys that ranged from a building survey to comprehensive studies of an entire educational program.

The Illinois State High School Testing Service has tested, during the past four years, about 180,000 students in 700 different high schools. The Elementary English Journal, Progressive Education and the Illinois Secondary School Curriculum Program Series now have headquarters in the College of Education.

Physical Education and Recreation

In the last four years the School of Physical Education has prescribed curricula leading to: (a) the Bachelor of Science in Health Education, in order to train teachers of health for public school service and (b) to the Bachelor of Science in Recreation, in order to train recreational leaders and administrators for service to public, industrial and commercial agencies. The capstone is now supplied by a degree of Doctor of Philosophy of Physical Education. One of the finest programs of its type is Illinois's research and teaching program in physical fitness. The goal is to help men and women to remain fit in heart, muscle, diet and skill at all age levels.

As a University facility and as a laboratory for the training of leaders in health education and recreation, the recreational offerings

of the campus are being expanded. Plans are being set up for the creation of a state-wide community recreational service. Allied with our growing work in public health, social welfare and clinical psychology, it should prove beneficial.

Communications

In the field of communications, the University has devised a new organization that has attracted nation-wide attention. For several decades the mass media of press, radio and film have grown in importance to higher education. Universities have been asked to train professional personnel for these media. Educational broadcasting stations, university presses and educational film libraries have been developed. More and more, these media have been used in teaching. Now that we face the prospect of higher campus enrollments in the middle 1950's, and of a greater need for extension courses throughout the State, these mass media will prove to be an essential part of the University's program.

With this future in mind, we have created a Division of Communications, headed by a dean who, with a policy committee, has the assignment of integrating the work in this field and of developing the program.

The School of Journalism, a leader in the field for a quarter century, has become, in this new organization, a School of Journalism and Communications, offering work in journalism, radio and advertising.

The Library School, second largest in the Nation, has added to its program advanced degrees and a series of courses dealing with the use of audio-visual materials. Broadcasting services have been overhauled with the addition of new programs and personnel. Beginning sometime this winter we should be on the air with a 50 kilowatt FM station,

obtained at what amounted to a gift price. This facility will considerably improve our State service.

The University Press has kept up a solid line of scholarly publications for which it is well known and has also effected a remarkable improvement in the appearance of the University's numerous service publications. Last year the Press published nearly 3,000,000 pamphlets for distribution in the State. Some of these are sold at cost. Most of them are sent on request free to persons in Illinois who need access to new knowledge in agriculture, engineering, business, small homes, teaching, home economics, health and dozens of other subjects.

The University of Illinois Press books have included in the last four years: definitive studies of Shakespeare and Milton, a monumental history of the Aesopic tradition (for which we received a foundation grant of $8,000), a technical book on The Mathematical Theory of Communications, a co-operative study of the resources of southern Illinois and a UNESCO publication, Tensions That Cause Wars. A University Press book this year was selected as one of the country's fifty best printed books.

A visual communications unit has been established to help the University better to make use of films, photographs and other visual teaching aids. The armed forces went far with this during the war.

Labor and Industrial Relations

In 1946 the Board of Trustees established the Institute of Labor and Industrial Relations to develop the scholarly work of the University in this field. With the assistance and advice of a Faculty Council and of an Advisory Committee representing labor, management and the general public, the University has developed policies and programs to guide the work. It is the purpose of the Institute to study the

process of interaction of labor groups with those of management and other groups - all in relation to common social goals and the public interest.

The University of Illinois is recognized as a major center in this field of knowledge. Three main aspects of the work have been developed. An extensive research program is under way, seeking to analyze the basic relationships between labor, management and the public in American society. Graduate students are being trained for work in management, government, labor and education. The curriculum is centered in a master's degree in labor and industrial relations. Extension activities in this area, under the general sponsorship of the Division of University Extension, provide classes and conferences over the State to meet the educational needs of labor, management and public groups. They are well received.

Law

For a number of years the College of Law has been working toward a comprehensive program of expanded service to students, lawyers and the people of the State. This concept has been given the name, "Law Center."

Two elements of the concept have already been realized and a third has been approved for 1951. The University of Illinois Law Forum, a quarterly magazine, first appeared in the spring of 1949. It is built around the symposium idea: each issue covers several aspects of a single topic. Topics are chosen, with the aid of an advisory committee of lawyers, from among those questions which are of pressing interest to members of the bar of this State. A second activity is a program of short courses for lawyers. The first of these was held in November, 1948;

since then these courses have been held three times a year. The support of these two projects by the legal profession has been enthusiastic. The third step will be to offer graduate work in law. Graduate work will be an intrinsic part of the research and educational aspects of the center.

Other aspects of the Law Center must await the attainment of new physical facilities for the College of Law.

So much by way of illustration of what is happening in the social science areas; let me add that work in anthropology has now been established at Illinois (the Department of Sociology has become the Department of Sociology and Anthropology); that the Speech Clinic has moved into a new home where it may expand its widely known services; that a Speech Research Laboratory, equipped with excellent scientific apparatus and headed by nationally known personnel, has been established in Illini Hall; that the Division of Social Welfare Administration has been given independent status; that the Department of Psychology, long known for its work in experimental psychology, has developed remarkably during the last few years in the fields of social and clinical psychology; that the Institute of Government, established several years ago at the request of the General Assembly, will have its own director this year and will accelerate its program.

The Humanities and the Fine Arts

This is said to be an age of science and technology. It is characterized by the discovery and use of techniques for the mastery of physical events. Since the purposes for which things are used are more important than the things themselves, this age, more than any previous

one, needs to establish a system of right and wrong that will be universally accepted. A failure to do this will bring disaster on a new scale.

Moral values - concepts of the good, the just and the true - are what hold the culture of a people together. They give it distinctive characteristics. Philosophy reveals values and compares them with those that have emerged elsewhere. Literature presents them as they affect the lives and aspirations of persons. The classics reveal how great questions have been dealt with down through the ages.

Esthetic values also distinguish one culture and one era from another. Ideas of the beautiful, of the appropriate have influenced the design of apparel, of dwellings and monuments, of paintings, sculptures and musical compositions.

All such ideas are saturated with emotional appeal. How each person feels is not only important to himself but also to the world at large. The decision to make war or peace may come in this way. The images that cause tears or smiles, rage or compassion, rejection or sympathy differ from folk to folk and from time to time. These images are developed in the works of creative artists - in poetry, music and the other fine arts. The door to all societies and to all ages is opened by the humanities and the fine arts.

Library

The University Library is a truly great repository of the products of man's creative efforts. On June 30, 1950, the Library held 2,383,500 volumes, representing an increase of 379,800 volumes in a four-year period, an average increase of 94,900 volumes per year. The average for each of the past three years has been over 100,000 volumes, a rate of growth exceeded only by Harvard and Yale. At present Illinois ranks first in size among state universities and third among all American universities.

During these four years, the Library has acquired some notable collections, for example:

- The Ward library on parasitology and microscopy, one of the largest and most important in the field.
- The Oberholser ornithological library, which was the leading collection in private hands.
- European wartime publications; 37,000 volumes obtained through a Library of Congress co-operative project.
- Many volumes of rare and early printed books and manuscripts, particularly for the fifteenth to eighteenth centuries in English literature.
- Extensive additions to the collection on labor and industrial relations.
- A comprehensive collection of contemporary Spanish literature.
- The Oppolzer mathematical library.
- A remarkable collection on organ building and manufacture.
- A collection of 50,000 United Nations documents.

The University of Illinois Foundation's gifts of sets of Audubon's Birds of America and of a facsimile of the Gutenberg Bible were noteworthy.

For this four-year period, the recorded use of the Library was more extensive than at any other time in its history, with an average of nearly 1,250,000 volumes per year.

In the field of public relations, three programs were carried on by the Library, aimed at stimulating reading and informing the community of our resources. These were the weekly "Library Hour," the "Library Presents" radio program and exhibitions of library materials.

Fundamental changes were made in the Library School curriculum in 1948. In line with extensive revisions in the field of library education going on throughout the country, the School's faculty overhauled

its entire program, beginning at the junior-senior level and continuing through the doctorate in library science.

In 1949 the Library School sponsored the Windsor Lectures in Librarianship. These lectures, dealing with new problems, are delivered each spring and are published by the University of Illinois Press.

Festival of Contemporary Arts

One of the original developments in the field of fine arts has been the Festival of Contemporary Arts. It was held for the first time in the spring of 1948 and is an annual event. This is a month-long occasion in which all the fine arts represented on the campus co-operate in exhibiting the best current work in their fields. At the time, an exhibition of contemporary American painting is hung in the Fine Arts building. Leading composers, conductors, poets, dramatists and artists take part in a carefully planned program of events. Visitors are numbered in the many thousands, and the Festival has the effect of making the Urbana-Champaign campus a Mecca for all who practice or enjoy the arts.

Extension and Off-Campus Developments

The roots of the University of Illinois run deep in the lives and the hopes of the people who pay the taxes. The sturdy trunk of the tree is the staff and student body in residence on the several campuses of the University. The great branches of this tree represent the University at work in the field through extension classes, conferences and special services.

The major extension divisions are the Agricultural Extension and the Division of University Extension. The Agricultural Extension program, supported in part by the Federal Government, is an outgrowth of the original land-grant plan. Through the years, it has grown in

effectiveness and in its firsthand contacts with the farmers of the State. Its present budget is over $1,600,000 per year. Through farm and home economics agents, every section in the State has access to the staff and facilities of the Agricultural Experiment Station and of the College of Agriculture. Experimental and demonstration farms attract thousands of citizens every year, Dixon Springs in Pope County being a notable example. Hundreds of thousands of bulletins on soil, stock breeding, housing, farm machinery, textiles, home life and other matters touching the lives of farmers and their families flow from the presses each year. In new formats, these bulletins tell their story as it has not been told before.

In the Farm Management Program farm records for ten consecutive years have been completed on 240 farms of comparable soil, size and market conditions. These records show that the best 10 per cent made $6,300 a year more than the poorest 10 per cent. Differences in crops grown, crop yields, amount and kind of livestock, in expenditures for power, labor and machinery accounted for the big difference in earnings. The distribution of 30,000 farm account books at cost and the fact that nearly 3,000 farmers are paying a total of $125,000 a year to secure business services through the Department of Agricultural Economics indicate the farmers' confidence in these projects.

Another phase of research in agricultural economics includes analyses of various phases of marketing grain, livestock, dairy products, eggs, poultry, fruits and vegetables. The information finds an outlet through meetings which are attended by 10,000 farmers a year, and through the wide circulation of a weekly "Illinois Farmers' Outlook Letter."

During the past four years, the Division of University Extension has grown fast. In 1946 there was set up an emergency program of freshman

centers in the larger high schools. This was a significant "assist," providing an educational opportunity to students, particularly veterans, who could not be accommodated on any of the University campuses. Thirty high schools joined in the establishment of these co-operative centers, with an opening enrollment of 3,100 freshmen. The second semester 3,600 enrolled, two-thirds of the students being veterans. It was understood that the entire venture was a temporary expedient from which the University would withdraw as soon as the emergency passed. The management of the program was directed toward the fostering of local community schools that might continue as independent junior colleges. In spite of the Illinois school law, which is unfavorable to the rapid growth of the junior college, three such schools have been established.

The number of students in credit correspondence courses has jumped in four years from 924 to 3,160. The students in noncredit courses have increased from 2,562 to 6,222. These courses are now being offered in 47 counties (64 cities and towns).

Excluding Allerton Park, the number of students enrolled in short courses and conferences has increased during the four-year period from 772 to 3,328, and the number of projects carried forward in special types of adult education has jumped from 10 to 58.

The University of Illinois is serving the entire State through its lending library of educational films. The number of films shipped to secondary and other schools has increased from 40,000 in 1946-47 to 60,000 in 1949-50.

An important addition to the University's facilities for extension and public service is the Allerton Estate near Monticello, presented to the University in 1946 by Mr. Robert Allerton. The formal

gardens and woodland areas have been thrown open to the public and are visited by several thousand persons each week. Long planning and considerable remodeling were required before the great house on the estate was ready for the use envisaged for it, but the work was completed and the house opened in 1949. It is a conference center for the University and the State. The center can now accommodate 65 persons overnight, and several hundred for meals and meetings. In the first year of the use of Allerton House, nearly 10,000 persons came there to conferences and short courses.

Off-campus forms of advanced professional and practical training have taken a dramatic turn. Through the College of Dentistry, for example, the University conducts the largest professional-educational extension program in the world. This is done by the transmission of the courses by telephone. The courses are now being attended by more than 12,000 dentists in 250 cities in North America. This extension work has proved to be of high value to dentists, especially in rural communities. The College of Dentistry was the first to use television for the presentation of postgraduate courses, and television is now emphasized in both on-campus and off-campus teaching. First trials have proved its value in surgery and in dentistry, and shortly it will be used in other areas.

Clinical Services

Since the close of the war, the University of Illinois has rendered many professional services to the people of the State of Illinois, including the tremendous work of the Research and Educational Hospitals. For example:

- A chemical analysis service for law-enforcing agencies in the state was established in the Department of Pharmacology and Toxicology in 1947.

- The University of Illinois undertook a co-operative program with the Museum of Science and Industry in 1948. The University also has produced two major exhibits for the Museum since the end of the war - "The Miracle of Growth" and "Cancer, The Story of the Wayward Cell."

- The Division of Services for Crippled Children provided treatment for a total of 9,075 children in 1949. Clinic service was rendered to 6,016 children in all areas of the State.

- The Staff of the College of Medicine provided the medical service at the Illinois Eye and Ear Infirmary. At that institution, more than 3,100 patients received bed care last year, and an additional 89,000 were seen in the outpatient clinics.

- The clinics and hospitals of the University of Illinois in 1949-50 admitted 7,414 patients to the hospitals for a total of 107,596 patient days and cared for 191,763 patient visits in the clinics.

Other Programs and Services

The trend is to weld curricular and extracurricular activities into a common life experience for the students. Thus residence halls have educational counselors, classrooms have "workshops," and great centers of academic and social experience, such as the Illini Union, offer something of value to all students.

Student Affairs

Marked progress in this area has been achieved during the past four years. The wholesome influence of the Office of the Dean of Students has been extended to the Chicago Undergraduate Division and to the Chicago Professional Colleges. The establishment of a Division of Student Affairs at the Colleges of Medicine, Dentistry and Pharmacy is among the first of its kind.

A new philosophy is being applied to the persistent problem of student discipline. Many troubles arise from a lack of opportunity to make the best use of leisure time. The plan is to reduce the occasions

that call for disciplinary action, with less emphasis on a system of penalties. Hence, an effort is being made to improve the recreational facilities for students.

The Illini Union and student organizations such as the Theatre Guild enlist the active support of young people in a wide variety of creative activities. New assistant deans of men and women who devote their time to organized groups have led to marked improvement in inter-group relations. The work of the Security Office is outstanding.

Other specific developments include the following items:

- The Placement Service, established immediately after the war, with offices on the Urbana-Champaign campus and in Chicago, has grown rapidly.
- The Illini Center in Chicago has been remodeled into a unit serving the Placement Office, the Alumni Association and other divisions of the University.
- Steady services have been given to foreign students through co-operation with the Department of State and the Institute of International Education.
- The High School Guidance Conferences are in the hands of expert counselors.

There has been increasing activity on the part of the students themselves. This is regarded as a sign of good health in the student body. For example, the Committee on Student Affairs, formerly composed of faculty members, is now a joint committee of students and faculty. The Student Senate has gained in strength through the additional authority granted to it, and students have been added to a number of University Senate committees and subcommittees.

The following new functions in student life and welfare have been developed:

- The Campus Chest is the outstanding fund-raising campaign on any campus in the country at the present time.

- The Vocational Conference held in the fall of 1949 was successful in its experimental form and is being sponsored in 1950 by the University.

- A series of all-University lectures is supervised by a faculty-student board.

- The President's Panel, with monthly meetings, gives a group of 30 student leaders the opportunity to present directly to the President numerous problems and to discuss them freely.

- The University of Illinois Dad's Association has been reactivated with a County Chairman in each county in the State. It has a paid membership of nearly 3,000 and its own publication. The Mother's Association is being re-organized along similar lines.

- A complete disaster organization has been established on the campus. This was begun at the time of a threatened tornado, but the plan would be helpful in other emergencies.

Athletics

Since September, 1946, University of Illinois athletic teams have won nine Western Conference championships: two in track (1947), two in baseball (1947, 1948), one each in football (1946), wrestling (1947), basketball (1949), fencing (1950), and gymnastics (1950).

Six of these teams also gained national recognition in post-season competition. The 1946 Illini football team won the Rose Bowl game of January 1, 1947, defeating U.C.L.A. 45-14 before more than 93,000 spectators in Pasadena, California. Illinois's 1947 track team captured the NCAA championship and was regarded as one of the greatest squads in American track history. The 1950 gymnastics team won an NCAA title; the basketball team was third in NCAA tournament play in 1949; baseball teams of 1947 and 1948 competed in the Eastern playoffs of the NCAA eliminations.

Millions of sports fans have watched Illinois teams in action during this period. In each of the four seasons the total football attendance for games, at home and away, varied from 435,000 to 504,000.

- The Department of Fish and Game's Annual Report for 1970 was published in October, 1971.

- A series of 4 educational films are supervised by a Faculty-Student team.

- The Wildlife Fund will award a prize of $2,000 annually in memory of Dr. Roberts during the Project's three years.

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Attendance

September, 1970, University of Illinois athletic teams

Duke and all Western Conference opponents: the La Grange (30%),

ge in Indiana) (17%), 2%), and Iowa in Toronto (13%), wrestling

(5%), Wesleyan (11%), Oberlin (10%), and Pennsylvania (7%).

Six of these games also gained national recognition in post-

season competition. The Duke-Illini football game on the same day

game of January 1, 1972, determine Big Ten. Only before were than

($2,000) crowd in Toronto, Ontario. Traditional rivalry began when

contained the Duke quarterback and was presented by the Big Ten at

house in Kentucky Fried Chicken. The 1970 presidential team was in NCAA

lifting the National Team Duke Tournament play in 1971:

Jones) Iowa of Duke and 1970 completed a the leading scorer the

NCAA tournaments.

Attendance at Duke home football games in 1970

during the regular in each of the four months the team played:

attendance for games, in the order listed, ranged from 42,000 to 50,000.

It is estimated that the attendance at intercollegiate contests, including football, on the Illinois campus each year, was 440,000.

From a recreational standpoint, for students and faculty, reopening of the Ice Rink and the opening of the new 18-hole golf course near the University Airport have been major events.

University Bands

Without a pause in step or a false note, the University of Illinois Bands, made great by A. A. Harding, have continued the tradition. The Marching Band has added to its laurels in music and in the appeal of its formations. The Concert Band continues its fine performances in the spring of each year.

Admissions and Records

With the increase in enrollment and the opening of undergraduate divisions at Galesburg and Chicago, changes were made in the former office of the Registrar. The name of the office was changed to Office of Admissions and Records; the title "Registrar" was discontinued. Identical systems were put into effect in all parts of the University. At Urbana, the system of registration has been completely modernized. Registration forms have been placed on I.B.M. cards and the routine aspects of the work are machine operated. The amount of writing required of students has been reduced by 80 per cent, with a corresponding saving in time. The administrator receives better records and more promptly. In order to conserve expensive filing space, the office is microfilming the older permanent student records.

Business Office

The Business Office has made a thorough study of the use of business machines in handling the financial transactions of the University.

Tabulating machine equipment is now used extensively. In 1947, the University became its own withholding agent. Improved accounting machines are being installed in the Business Office.

A separate division of the Business Office has been established to handle purchases and insurance, and to administer the staff health and accident insurance program established in 1949. There has also been set up a Central Receiving Station for the Urbana-Champaign campus to receive and route shipments to departments.

Although limited as to cash funds, the Business Office has worked out procedures with local banks in order to cash checks, especially veterans' subsistence checks.

The Business Office has carried on a continual audit of cost plus contracts which were necessary in the postwar period. These audits assured the University of the accuracy of charges incurred under such contracts.

The Business Office has worked with other University Divisions in simplifying procedures. Examples are the placing of registration on tabulating equipment, the new fee schedule and the new rules for student loans. The Business Office has published a manual that outlines the procedures followed in the University. This publication is in loose-leaf form and is kept up to date.

Office of Nonacademic Personnel

During the past four years, the Office of Nonacademic Personnel has faced a huge task in recruiting and training persons for the many new positions required by the University's expansion. It has developed a program of training and education that reaches two-thirds of all employees. It has revised and kept up to date a classification and

compensation plan that insures fair treatment to all employee groups.

Other accomplishments include:

- A visiting nurse service that has decreased absenteeism.
- New recreational and social activities.
- Safety measures.
- The organization of employee councils.
- Publication of the first "house organ" of its type in the field of higher education - the monthly Illini Worker, which is distributed to all nonacademic and to many academic and administrative staff members.
- Reorganization of the Civil Service procedures to meet legislative changes.
- An examining program.
- Collective bargaining relations with thirty-six recognized labor unions.

It can be said that these steps, in the aggregate, indicate a gratifying degree of mutual respect in this great area of University service. There is no conflict between the goals of the academic and the nonacademic - all seek a better University; frequently the work assignments, in laboratories for example, shade into one another.

IV

SOME CONTINUING PROBLEMS

The Changing Character of the Student Body

In gross size, the postwar University had to be twice the prewar University, and something more than mere doubling was demanded. In one sense, the call was for the creation on the Urbana-Champaign campus of a "second" University.

In the past four years the composition of the student body changed. Four years ago, the Graduate College enrolled 1,792 students; in 1949-50, there were 3,359 graduate students. Four years ago, there were 6,168 juniors and seniors; last year, there were 9,444 juniors and seniors.

The Board of Trustees agreed that the administration should make this "second" University as good as, if not better than, the "first" University. If there was to be a doubling in size, there should be also a gain in quality and distinction. Anything less than this would be selling higher education "short" to the people of Illinois.

Accordingly, a world-wide search for talent has been undertaken. Fifteen deans and directors and twenty-five new department heads have been appointed. To meet postwar needs, seven new divisions have been created with their own administrative officers. The academic staff has grown from 1,528 to 3,144. These figures illustrate in a surface way what it has meant to create in four years a "second" University equal to the "first" University of the prewar period.

There was another requirement. We have heard much of wartime invention and discovery. If the laboratories and materials of

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the postwar University had merely duplicated those of the prewar period, they would have been out of date and the University would have surrendered its front-rank position. Among the new research facilities, may be mentioned:

- The carbon-14 laboratory, insulated with lead, provides a place where radio-active materials can be used.
- The atmospheric chambers, at Urbana-Champaign and Chicago, create low pressures and other controlled atmospheric conditions for testing animal and human reactions to high altitudes.
- The electron tube laboratory is a center for some of the advanced research and teaching in electronics.
- The electron calculator for high speed mathematical computation will aid research in a dozen fields.
- The measurement laboratory provides for the calibration and repair of high precision instruments.
- The microscope repair laboratory handles the maintenance of hundreds of microscopes over the campus.

The doubling of the University has been done in response to the new needs of the students and of the State. The University looks to the future. The hope is that the college-prepared youth of Illinois will compete successfully with youth anywhere, and further, that American youth will never be at a disadvantage.

The Integration of Work on the Several Campuses

The prewar University had two campuses; now we have three. The conviction is general that the State economy and the State's needs will be best served if these separate campuses operate as one closely-knit University. The continuing problem is how to maintain a close integration of work on the several campuses without reducing the natural pride of each campus in its own accomplishment.

When the Galesburg and Navy Pier Divisions were established the effort was made to give their students an educational opportunity equal to that offered at Urbana-Champaign. This policy continues in the case of Navy Pier. It would continue if a four-year branch of the University were to be established. The differences lie in physical surroundings and in the restriction, to one campus or another, of certain curricula that should not be duplicated. It would be considered indefensible, for example, to duplicate the costly resources of the Professional Colleges.

In forming the administrative structure of the several campuses, we have tried to strike a balance between autonomy and integration. The Chicago Professional campus is in charge of a Vice President, and the Chicago Undergraduate Division in charge of a Dean, and both are given wide powers. The business offices of the Chicago campuses are integrated with the Urbana-Champaign business office under the direction of the Comptroller of the University. The offices of nonacademic personnel are similarly organized. The Dean of Students has ultimate responsibility for student welfare at all campuses. The libraries at Navy Pier and the Professional Colleges, as well as at Urbana-Champaign, are under the general supervision of the Librarian of the University. The Chicago campuses are represented on the major committees of the University, and the President presides at meetings of both the Chicago faculty Senate and the Urbana-Champaign Senate.

A continuing study is made of means by which courses and curricula at the several branches may be integrated, and of ways to share resources without wasteful duplication. Our nursing students may take their undergraduate work at Urbana-Champaign and their hospital work at Chicago. Certain programs in clinical psychology and

the study of mental health are so arranged that part of the student's work is done in the Graduate College at Urbana-Champaign and part in the Hospital and the Neuropsychiatric Institute at Chicago. Advanced students of Speech may get clinical experience on both campuses. The Division of Social Welfare, likewise, is able to give its students experience in both cities. Transfer of students between campuses is made easy. There is much professional contact between the staffs and periodically there is a special celebration (Chicago Campus Day at Urbana-Champaign).

The Demand for Special Services to the State and the Nation

In the last war, the University of Illinois was put at the service of the Nation for the training of specialized military personnel, for the solving of scientific problems and for the provision of research men and administrators to military agencies. In the event of another national emergency, the University, on short notice, could mobilize its resources. Certain steps have already been taken in this connection. If the test comes, I visualize the University as a great center of wartime activity.

This does not mean the abandonment of the main functions of a University; there must always be a hard nucleus of teaching, research and demonstration in areas not immediately war-related. A time-tested policy has been to make teaching and research talent and the facilities of the University available to government and to other organizations, along lines that make the best use of such resources.

Under this controlled policy, our research and training contracts with the Armed Services and other national departments have each year amounted to several millions of dollars. Our contracts and relations

with private organizations have also been extensive and mutually helpful. At times we have been able to assist directly in meeting problems of the State of Illinois.

The present world situation makes it probable that demands on the University for special services will increase. We shall try to meet them without undue diversion from our main business of preparing youth for whatever lies ahead.

The Need to Strengthen Certain Areas of the University

It is hard to show objectively that a university has grown in strength and excellence. In the early 1930's a widely published survey of large American universities rated the University of Illinois as "distinguished" in four departments. The criteria of this survey were, of course, subject to question, but if we were to apply them today, I think we should arrive at a "distinguished" rating for four or five times as many. I am not going to name the departments or the professors, for even a small probable error would cause anguish. The Provost has made extensive inquiries into this matter, for it lies at the heart of university planning. In his opinion about 25 departments have made notable gains in recent years, while few, if any, departments have lost ground.

In the process of strengthening some areas, there is always the danger of failing to maintain departments already strong. Here I think the facts speak for themselves, but I shall give only one illustration. The Presidency of the American Association for the Advancement of Science, the winning of some of the most coveted research awards, a new chemistry building with such equipment as the ultra-centrifuge and new electronic microscopes, a steady stream of graduates always in

demand - all this testifies to the ability of the Department of Chemistry to keep its place at the top.

That there is still much to do, the deans, directors and department heads at budget time make abundantly clear! It lies in the nature of a good professor not to be satisfied, not to lean back content. Fortunately this ever-expanding universe is not of size or structures, but of the mind.

V

FINANCIAL RESOURCES OF THE UNIVERSITY

Institutions are like persons; they cannot do their best work unless they have the full support and confidence of others. Confidence in the postwar University of Illinois was expressed in convincing fashion by the thousands of veterans and other students who sought to enroll, and to an equal degree by hundreds of persons who sold their homes and broke former ties to join our staff.

To these sources of support may be added one of the largest organized Alumni Associations in the country, and certainly one of the most loyal. Another demonstration of loyalty to the University has been the Illini Achievement Fund of the University of Illinois Foundation. In its first full year of operation, it broke all records among college funds for the number of contributors.

All such demonstrations, however, would have been fruitless if the people of the State, through their elected representatives from the Governor down, had not wholeheartedly voted the appropriations necessary to meet the problems which have been reviewed in this report.

A brief summary of the extent of this support will suffice, for it is found in annual reports.

From tax funds the biennial appropriations by the General Assembly went from $43,000,000 in 1945-47 to $70,000,000 for 1949-51.

The initial appropriations for the biennium 1945-47 were: for current purposes, $20,264,000; for capital purposes, $16,809,000; total, $37,073,000. These appropriations were increased by emergency appropriations of $6,184,000, to provide funds for operation of the new Chicago and Galesburg Undergraduate Divisions and for staff housing,

making the totals for the biennium: for current purposes, $26,198,000; for capital purposes, $17,059,000; total, $43,257,000.

For the biennium 1949-51, the corresponding appropriations were: for current purposes, $54,479,000; for capital items, $15,740,000; total, $70,219,000.

These sums were from tax revenues only. Appropriations were also made of University income from student fees, and from operations, all of which are deposited in the State Treasury. For 1949-51, the added amount was $15,000,000, making a total appropriation from all funds of $85,219,000 for the two years.

By state law, the University handles its own treasury receipts from Federal grants and all trust funds. Included in the latter are public and private research contracts, private gifts and activities operated under trust indentures or bond issues. The total of current operations in 1945-46 was $18,415,000; for 1949-50 it was $44,274,000. At the Chicago Professional Colleges, expenditures from trust funds were a little over $200,000 in 1946 and $962,000 in 1949-50.

Income from Federal grants and contracts increased from $2,904,000 in 1945-46 to $4,233,000 in 1949-50.

Income from expendable private gifts and endowment income increased from $469,000 in 1945-46 to $1,323,000 in 1949-50.

During the years 1946-50, funds for new capital projects to the extent of $2,834,700 were secured by borrowing, not including $825,000 of refunding operations on previous loans. The range of interest on these transactions was from 1.52 per cent to 4.00 per cent.

From the Illini Achievement Fund of the University of Illinois Foundation, the University received gifts of $88,000 during 1949 and 1950.

On June 30, 1946, the permanent student loan and endowment funds received from private sources was $1,829,000; on June 30, 1950, the total was $2,667,000.

On June 30, 1946, the investment in University plant and equipment, at cost, was $48,027,000; on June 30, 1950, it was $78,719,000.

VI

WHAT LIES AHEAD?

It is clear that profound external forces have been acting on the University of Illinois during the past four years. This can be said of all American universities. We have grown by forced draft beyond all reasonable plans that could have been made. The influence of the "GI Bill" was decisive. The country attained new levels in the production of wealth.

There can be no pause for contemplation of past achievements. The new blueprints highlight present deficiencies - in student housing, in buildings, in scholarships, in the organization of curricula.

What trend lines are discernible? What questions should be asked, even if the answers cannot be given without further policy clarification?

Question 1. How big will the University of Illinois become?

The number of persons of college age at any given time can be predicted with accuracy. To predict the number who will actually enroll is another matter. Per capita income, business conditions, the availability of scholarships, the resources of colleges and universities, the chances of war or of peace, are among the factors to be weighed. Clearly the size of the University of Illinois is not determined simply by the number of persons who are born in a given span of years. In the long run, the twin forces of public policy and of a need for educated persons will determine the size of the University of Illinois.

At present the State of Illinois, like most other states, is allowing vast human resources to go to waste. Thousands of Illinois youth in the upper half of their high school graduating classes fail to continue their education. They are not as well prepared as they have a right to be, in view of the complex and technical character of society today.

The establishment of a two-year branch of the University of Illinois in Chicago does not solve the problem of public higher education in that area. Half the population of the State lives in and around Cook County. If the State should elect to provide in Chicago a full four-year program, with an adequate campus and plant, there is reason to believe that it eventually would serve 20,000 students. (A total University of Illinois student body of 45,000-50,000 would not be out of line with the numbers in neighboring state universities, allowing for population differences.)

In the long run the University of Illinois should be large enough to do its share in providing higher education to every able young man and woman in the State.

Question 2. What will be the long-time University askings in buildings, equipment and housing for students and staff?

This question cannot be answered in an exact number of dollars. Under present conditions the elements of the answer are: 265 square feet per student at $25 to $30 per square foot. Conditions can change fast. The prescriptions for housing, laboratories, classrooms, offices, administrative areas and other activities of the University will change as technology and the methods of instruction change. There was a time when physics could be taught in a small room. Today betatron, cyclotron and electron tube laboratories are only three of the requirements - immense and costly.

To some degree what is true of physics is true of other sciences. Mathematics, long a pencil and paper science, now calls for intricate computers as it reaches into numerous areas of human inquiry. It is likely that facsimile reproduction and television will exert a strong influence on teaching and learning. Few men could have foretold the dramatic changes that have taken place in bacteriology. The microscope that relied upon light has been supplemented by one that relies upon electrons; workers can now observe directly certain viruses and large molecules. The study of fluid dynamics, of sonic and supersonic speeds, urgent in both war and peace, makes heavy demands.

The need for student and faculty housing will increase proportionately to the size of the University. These needs, as we have seen, are already critical.

As recent events have shown, in a complex University the size of the staff is only moderately correlated with the size of the student body. Advanced types of training reduce the student-professor ratio. Increasingly, staff members work in teams. Personnel must be available in order to provide for numerous public services expected of a state university.

Question 3. How is the University related to the national government?

The early land-grants and subsequent federal payments, the crucial business of producing and distributing food, the need for unity of action in a hostile world, the overriding demand for full preparedness - these conditions tend to strengthen the bond between state and federal government.

No one questions the historic rôle of universities in confronting tyranny, medieval or modern. The spirit of any free university is against Fascism, Nazism and Communism. The University of Illinois

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No one questions the historic rôle of universities in combatting tyranny, medieval or modern. The spirit of any free university is against Fascism, Nazism and Communism. The University of Illinois

will surely play an important part in the deepening struggle. This part is not fundamentally different from its regular life, for the University does not, in a crisis, abandon the search for knowledge. It cannot be stated too bluntly that something abstract, remote, on the fringes of knowledge, at the start of a war, may suddenly grow into the chief weapon - or the chief idea - of the pattern of victory.

During times of conflict, theories and principles retain their importance, for they are the prelude to the practical device. The device itself - a killer, a preventive, an item of ideological warfare - is usually best developed off the campus.

Excessive dependency upon government contracts reduces independence of action. Such income is usually restricted income, good only for the purpose of fulfilling a contractual obligation. If the contracts are excessive, the demands of the federal government, rather than the desires of the people of the State, determine the nature of the University. Without going that far, the University can do much to help the Nation in a time of crisis. It can develop its basic research with unusual vigor. It can strengthen the educational programs of the Reserve Corps. It can make its staff available for consultation and service to governmental agencies. Finally, the University can strengthen its teaching of a devotion to the democratic way of life, making sure that the minds of men will not be confused by alien doctrine but will remain free to pursue the truth.

Question 4. How can the quality of teaching be improved?

Teaching has at least four elements - the student, the teacher, the subject and the environment. Each of these must be considered in plans for improvement. To some extent, each must be changed if the quality of teaching is to be bettered.

It would be comparatively easy to change the nature of the student body at the University of Illinois by adopting highly selective procedures for admission. This is a plan followed by some of the great private universities. It would be difficult for a professor to teach so poorly that extremely bright students could not learn. The great state universities have wisely chosen a different course. They tend to admit, to the general curriculum at least, all high school graduates who seek further education. They endeavor to carry forward the ideal of universal education.

For his part, the teacher is full of questions about methodology. What can be discovered about motivation? About level of aspiration? About problem solving? About the ways in which youth seek to adjust to learning situations? What is the rôle of the teacher in facilitating learning?

Problems of motivation, learning and mental hygiene have a parallel in the effects of the environment upon teaching. A university tries to create a specialized type of environment - an environment favorable to mental growth. Class size, visual aids, laboratory equipment, field trips, tests and television may be among the variables for student and teacher alike. What are their effects? How can they be used efficiently? What new devices and methods are needed? In what ways can the methods developed during the war be translated into daily practice?

The problems of content and subject matter are no less difficult. The more a man learns, the more he can learn; each item of knowledge opens a new door. The scope of the intellectual disciplines expands in geometric progression. Still, the time a student can spend in the University is limited. How, then, can more and more

be put into a course, in order to keep up with the expansion of human knowledge? Choice and a new order of generalization are indicated, but the practical implications in teaching are rarely brought to light.

The University is trying to help along these lines:

- By encouraging the investigation of teaching and learning.
- By finding new ways of discovering and rewarding great teachers.
- By calling upon judgments of students.
- By making the results of research in the improvement of instruction available to the entire faculty.

Question 5. How can the services of the University be related more closely to the needs of the people of the State?

The mental maturity that is gained on a campus is a permanent acquisition of the student. Habits of adjustment and reasoning that have been learned will continue to serve our graduates in their lives.

The public often thinks of service from the State University in other terms. Some know of the work of the extension division in agriculture, family living, education, business, government, labor relations, music or library and think that the help they receive is all that is meant by service. Others know of extramural classes, of short courses, both on and off campus, of correspondence courses. Still others know the bulletins and publications of the university, the films and recordings made available, the paintings exhibited throughout the state or the tests that are rented to high schools. All these activities are desirable; we intend to continue them, although they cannot be expanded to meet all the needs of all of the people. If the people of the State are to receive valuable help, they must come to know the latest discoveries in many fields. It is not enough to acquaint them with something that will work well enough, when another procedure will

work twice or three times as well. Whatever the University communicates through its service to the people of Illinois should be of the best. What is best is discovered through scholarly work and fundamental research.

Question 6. How can the staff of the University of Illinois be brought into close and harmonious relationship with one another and with the administrative elements of the University?

A university, more than any other institution, is always on the march. If alive at all, it can never call its work done. It should be among the first to adapt its programs and its policies to new truths. New ideas often eliminate old ones or change their priority. This gives rise to frustration. Whenever men are expected to carry on new duties, or to perform old ones in new ways, a resistance to change is created. True, faculties are familiar with the idea of change but faculties are human. There will always be some who will walk the new path with reluctant feet, uncertain where it will lead them. It takes time also for both old and new staff to create new social groups and common interests.

It is to be expected that, during a period of rapid expansion, some mistakes in the selection of personnel would be made. They tend to be self-corrective but, on occasion, they call for administrative decisions in which the all-University interests are kept paramount.

Organization charts, rules and regulations, statements of the duties and powers of officers and other formal arrangements do not constitute administrative leadership nor do they automatically open channels of communication. It is the common give-and-take among like-minded people that is important. In a university, an administrative officer is frequently surpassed as a scholar by many members of his

faculty. His assignment is different. Each should learn to appreciate the full worth of the other, and both should respect the devoted work of nonacademic employees.

All university problems can be solved by persons of good faith working together toward a common end. The human resources of the faculty are tremendous. They generate a power that can be brought to bear upon the hard problems that lie ahead.

Perhaps the last four years have been like the country that Alice found when she went through the looking glass, and the Queen said, "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

Now is the time to plan the future of the University of Illinois. The general lines are laid down, as, indeed, they have been for many years. Learning and Labor are on our shield and that device should not fail.