A Business Man Learns

What Makes a University

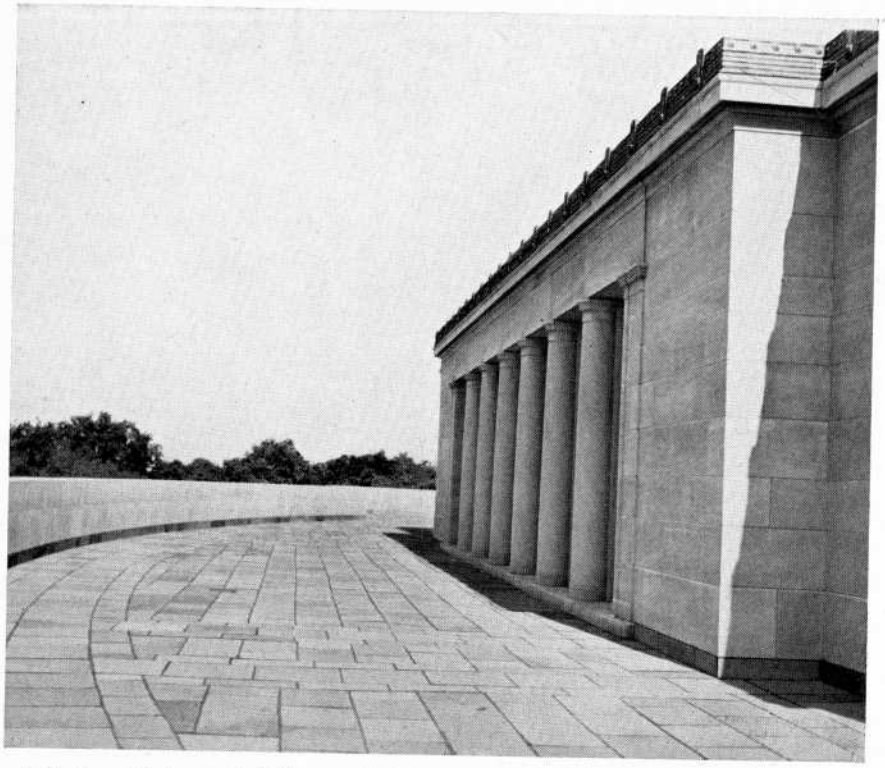
BY WILLIAM B. BENTON

If the University of Oklahoma continues to enrol more students each year and at the same time receive less money per student in state appropriations, there is danger that the institution will tend to become only a big college instead of a university.

The thing that distinguishes a university from a college is that it adds NEW knowledge instead of merely teaching old knowledge; it devotes time and money to research in order to extend the boundaries of knowledge; its job is not only to TEACH but to LEARN.

This idea is unfamiliar to many Oklahomans. They probably would be surprised to know that at least five hundred members of the University of Chicago faculty spend most of their working time on research rather than classwork.

Sooner Magazine *readers who want to see O. U. continue as a real UNIVERSITY will be interested in the following article by William B. Benton, vice president of the University of Chicago. It was delivered originally over the Columbia Broadcasting System network and was printed in* Talks, *the quarterly magazine published by CBS. It is reproduced here by special permission. — Ed.*



This beautiful new building at the University of Michigan is the home of the Horace H. Rackham School of Graduate Studies and is the center of much of the research work at Michigan. It emphasizes the importance attached to graduate research projects at major universities of today

NOW please don't misunderstand me. One of the many things I do not know about education is how to train a young man or woman for business. However, in the past month or two I have begun to discover how much a business man has to learn if he is to understand education.

My own formal education was like that of many business men. I took an A. B. at a university. I was a student in an eastern college at the height of the "coonskin-coat" era. If my classmates and I had analyzed ourselves honestly, most of us were there to put in four pleasant years at our parents' expense. Our ambition was to become "college men." It seemed important to us then that our Alma Mater should have a winning football team, even if football had little to do with our education. We wanted good grades in our courses providing it didn't take too much of our time. The professors were doubtless fine men. We never got to know any of them. In fact we avoided them whenever possible.

George Santayana, the philosopher, once described the relation between my classmates and the professors as like that between a milkmaid and a cow. "Mutual contributions may pass between them," Santayana remarked, "but not conversation." The professors' job was to conduct classes, to keep us awake in them, and at the end of the semester to engage us in a battle for grades.

That was the picture which I carried with me into what we called "life." Few of my classmates even considered the merits of further education once we were entitled to call ourselves "Bachelors of Arts," unless we wanted to become high-priced lawyers or doctors and had to stay on. It seldom occurred to us that a life of scholarship or university research might be a career for a man. To us, the graduate student, to quote Dr. George E. Vincent, was a fellow who didn't know enough to go home when the party was over.

My father was a professor of a well-known American university and I was raised near its campus. I received a degree from another well-known university. Now I am on the staff of a third. I am now, for the first time, trying to understand how a great university contributes to civilization. I am learning fast by seeing one of America's great universities in action, and by seeing it from the inside. The effort to define a university to you, however, seems almost as difficult as defining life, or love, or religion.

In the writings of Dr. Eliot, former president of Harvard, I found one definition. "A university," Dr. Eliot wrote, "is a society of learned men, each a master in his own field, each acquainted with what has been achieved in all past time in a special subject, each prepared to push forward a little the present limits of knowledge. Hence, universities are places of research, of diligent inquiry for new or forgotten truths. This incessant single-minded search for new truth is the condition essential for both the material and the intellectual progress of the nation and the race."

This definition will help you understand the University of Chicago. It will help you to realize why there are a great many students here who are scarcely aware that their university has a football team. Professors do meet classes; yet there are some Chicago professors who do a large part of their work thousands of miles from the campus. Some of the most famous teach only a few students, and not in classrooms at all, but in offices and laboratories.

The longer I am here, the more I learn

(PLEASE TURN TO PAGE 28)

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(CONTINUED FROM PAGE 12)

of this major phase of university work, the phase emphasized in Dr. Eliot's definition: *research*. One day last week I heard of four widely different examples. One University of Chicago professor, an expert on South American geography, had been flying over the wild country at the headwaters of the Amazon River, developing new methods of geographical observation from the air; another, a biochemist who is trying to discover new knowledge about the pituitary gland, had just returned from a whaling expedition off the coast of British Columbia, where he had secured samples of the unusual pituitary glands of whales; a third, a scholar of English literature, was back from London, where he and several students had been at work in the Public Records Office, seeking to check the sources used by Geoffrey Chaucer in writing the *Canterbury Tales;* a fourth, a graduate student in sociology, had turned in a report of his interview with narcotic addicts, and his conclusions as to why people become addicted to drugs.

I asked, "How many members of the University of Chicago Faculty devote most of their working time to research?" The answer was "At least five hundred." I learned, too, that more than fifteen hundred advanced students, "graduate students" as they are called, are engaged in research work, and that more than half the University's budget goes into research.

How can this scene of intense, varied intellectual activity be reconciled with the average man's picture of bright college days, a picture which grows brighter through the mist of years and which is heightened by alumni reunions, by the movies, and by the thousands of columns the newspapers give to college athletics? How can it be matched against recollections of football and chrysanthemums, fraternities and dances, the rush to make the 9:00 o'clock bell?

The answer is simple. It lies in the difference between *a college* and *a university*. This difference is far greater than most Americans appreciate. A college is chiefly concerned with teaching. Its main job is to acquaint young citizens with the essential parts of mankind's accumulated learning. Its purpose should be to train them to think— to think clearly and to think for themselves. That is an important job.

A university's job, on the other hand, is not so much *to teach* as *to learn*. In other words, it is concerned with discovering new knowledge. And that is an even more important job, if civilization is to advance. A university might do no formal classroom teaching and still be the greatest university in the world. It would need no students in the accepted sense, no seekers after degrees, but it would need the greatest staff of scholars

and investigators, and the best equipment, that could be assembled. Of course universities should also engage in teaching. They must educate those who are to be the scholars, scientists, and professional men of the next generation. To take the highest degree at an institution like the University of Chicago, the student must himself make an original contribution to human knowledge. He must discover something that has never been known before.

There are more than a thouand colleges in the United States. At a maximum there are not more than thirty real universities. Eight or ten of these universities are privately endowed and financed. Harvard, Yale, Columbia, and the University of Chicago are the best known of these. The rest are state institutions, supported by public taxes. Part of the confusion in the public mind between colleges and universities is that universities maintain undergraduate colleges. Some of them, like the University of Chicago with its new plan, do a brilliant job of undergraduate teaching. These colleges give the universities the flavor of college life.

What is it universities try to learn? What good does university research do? A business man certainly should be the first to applaud the idea of research. The greatest advances of modern business and industry rest upon scientific and technological experimentation. But here again the business man has something to learn about universities. Most of us have confused science with the invention of new gadgets.

Recently I talked with Professor Arthur H. Compton, the University of Chicago's great physicist, who won the Nobel Prize in science. He is not interested in perfecting articles for the market. He spends most of his time trying to learn the nature of cosmic rays, those mysterious radiations which come from outer space and strike the earth with tremendous energy. I asked him a business man's question, "What practical benefits can we secure from cosmic rays?" He didn't smile. He said, "The first thing they will do is help us understand the universe in which we live. As for practical consequences, we cannot tell surely. It may be that research into cosmic rays will be one link in a chain of investigation, undertaken by men over many decades, which will lead some day to the release of atomic energy."

I might have told Dr. Compton that if his experiments led to that result, to provide mankind with unlimited, cheap energy—power at everyone's hand—he would influence the course of history more profoundly than any dictator now living.

To those of us who ask, "What good is a cosmic ray?" the answer was given long ago by a great scientist, who was asked a similar question by a politician and replied, "Sir, some day you may be taxing it." He was Michael Faraday, and he discovered something interesting, but apparently useless. It was the principle of electro-magnetic induction, which is the basis of our electrical industry.

The ultimate aim of a university's work is to contribute to the welfare of mankind—to the happiness of man's mind and the health of his body. But it must take many paths to arrive at this long-term goal. For example, many years ago a group of Wisconsin carnation growers asked the Department of Botany of the University of Chicago to find out why their flowers curled up and died in Chicago greenhouses. The botanists discovered that ethlene, a component of Chicago's illuminating gas, was killing the carnations. They mentioned this to Dr. Arno Luckhardt, a University physiologist. Dr. Luckhardt wondered what ethylene would do to rats. That was the start of his discovery of ethylene as an anaesthetic. Since then it has been used in millions of operations in hospitals, as an improvement over chloroform or ether.

Thus the ultimate conquest of cancer may come not from a medical laboratory but from the laboratory of some obscure university investigator who is trying to discover new knowledge about the nature of living tissue. Adolph Ochs, the late publisher of the *New York Times,* said that if the cure for cancer were ever discovered he would devote the first seven pages of his newspaper to it. That makes it news more important than the outbreak of a European war.

Politicians like to talk about the more abundant life. The universities are doing more than the politicians ultimately to produce it. The universities, through their research, may save or enrich thousands of lives six months from now. Much of their work, however, will come to fruition decades, perhaps centuries, from now, when those who are doing it are dead and succeeding generations have carried it forward. Business men have to think in terms of today, tomorrow, next month, or next year. They should try to understand, and appreciate, the men whose gaze is also turned toward the centuries to come.

Thus a university is made great by having great scholars and investigators on its staff, by providing them with equipment, and by giving them freedom to search for the truth. If we deny them freedom, we are claiming that we already know all the answers to our problems. Some of the European countries now deny freedom to their universities. The universities of America are welcoming the exiled scholars of these countries. The time may shortly arrive, if indeed it is not already here, when the United States will be the chief center of the world's learning, the home of man's eternal search for truth.