One hundred years ago, in 1873, the University of Michigan had 1200 students mostly engaged in the study of the classical curriculum, including strong attention to Latin and Greek, although some science and engineering had already been added to it. Not so very long before that year faculty members were still chosen here in order to give representation to the different religious denominations of the time. The faculty numbered 35. The library had 25,000 volumes. The campus included nine buildings, four of which were faculty houses. There were no intercollegiate activities of any kind. Yet Michigan was one of the largest and one of the best developed campuses in the nation.

Today Ann Arbor has about 40,000 students and nearly 3,000 faculty members; and its curriculum covers virtually all the knowledge developed in the long history of civilization. The library has nearly five million volumes. Building and grounds are worth about half a billion dollars. The development of Ann Arbor as a center of learning over the past century is one of the most remarkable accomplishments in the long history of higher education around the world.
The past century was certainly a Golden Age for the University of Michigan, as it also was for the other leading research universities of the nation. The whole century may be so characterized, although I realize that the presidency of Angell, from 1871 to 1909, is more specifically known as the "Golden Age of Ann Arbor" in Michigan chronicles.

I cite this history as background for the question: has the Golden Age ended for Michigan and for other American universities? I raise this question here today because those of you receiving your degrees now become alumni, and, among state universities, no alumni group has given more support than the alumni of this university. As one measure, last year the alumni of this institution gave $5,000,000; the comparable figure at Berkeley was $500,000. There is a long tradition of such support here, developed particularly during the time of President Hutchins from 1909 to 1920. Where may Michigan stand in the year 2023 when some of you will return as loyal alumni for your 50th reunion?

I raise this question also because some of you will find your careers in the research universities of America. What may happen to them? How may they then stand when some of you retire from their faculties as distinguished professors in 2013? More immediately, what are the prospects that you may even get employed at all, and, beyond that, secure tenure?

The answer to the question, briefly, is that nobody can know the answer. It is the characteristic of a period of transformation such as this that the course of future events is unclear. But I should like to speculate about some possible answers. I define a Golden Age as a period
of actual great prosperity and progress; and not as that mythical prehistoric age of the "noble savage" from which some philosophers have said man has steadily descended, or as some other idealized time in the past that was, in fact, not so ideal.

1873 to 1973 was certainly a period of great prosperity and progress for Michigan and for its sister institutions. What are the prospects for 1973 to 2073?

To begin with, no percentage growth in the next century such as in the past century is even conceivable. Enrollment at Ann Arbor will not multiply 30 times over. In some categories, at least, even a repetition of the absolute amount of growth is unlikely.

For higher education as a whole, enrollments doubled every 12 to 15 years from 1870 to 1960, and more than doubled from 1960 to 1970. In the 1980's, they will decline by 5 to 10 percent; and they may not much exceed in 2000 the level of 1980. This will be a traumatic experience:

Fewer new faculty members will be employed. Yet we built up our capacity to produce Ph.D.s from 10,000 to 30,000 a year in the 1960s, and were on our way to an output of 50,000 a year or more. I will come back to how I think this may affect Michigan a little later.
Fewer new faculty members means fewer opportunities to engage more members of minority groups and women. What could have been accomplished in the decade of the 1960s by way of a better balancing of faculties, will now take until the year 2000 or even longer.

More faculty members will have tenure—perhaps 90 percent or more in 1990; already at Berkeley the figure is 85 percent. This reduces the ability to adjust to new fields as they come along and to changing student interests which are now much more volatile than ever before.

Perhaps most important of all, the cessation of growth can mean the cessation of change, since most change has come through growth. Change will now need to come more through replacement, and that is a very difficult way to change. And without change, an institution can become moribund in a changing world.

Beyond these demographic consequences, are other concerns. Higher education now absorbs 2.5 percent of the GNP, up from 1.0 percent in 1960. Given other national priorities, this percentage may be close to the ceiling for the prospective future. Additionally, there does not now seem to be in prospect any great flowering of a field of intellectual endeavor similar to that of science in the past century. And, finally, among many
other factors, the university segment of higher education will not expand as much as will the community college segment or as will "further education" at a postsecondary level outside the college walls.

Quantitative prosperity and qualitative intellectual progress both almost certainly will be less dramatic than in the past century as far as we can now see ahead. It is not even assured that, as Cicero wrote about Rome, an age of "silver" will follow an age of "gold."

What about Michigan? I expect that it will do comparatively well, perhaps even comparatively better than it has. And it now does very well. The recent Blau study of the quality of professional schools can be, and is being, interpreted in many ways. My own interpretation places Michigan tied with Columbia for third place, following Harvard and Stanford; with Berkeley sixth, following Chicago, and followed in turn by Yale. The Cartter study of 1964 placed Michigan in the top rank in the letters and science fields, and the Roose study of 1969 added engineering.

I would expect Michigan to hold its very high place among the leading research universities and not just because changes in place have occurred only gradually since the first study of academic quality was made in the early 1920s; but, among other reasons, also because, in a more static period, changes are likely to take place even more gradually. Those who are ahead are more likely to stay ahead.

Beyond that, those that are ahead are likely to move even farther out in front. It will be harder for those trying to move up to make it.
One of the great tragedies in American higher education currently is the series of campuses that tried to make their moves toward the top too late in the 1960s, and have now fallen back. Some just made it in time. There will now be fewer new challengers. Also, the many peripheral institutions, outside the circle of the leading research universities, will generally fall back. About 180 universities now grant the Ph.D., with 60 of them awarding two-thirds of the degrees. I would expect that recipients of degrees from the outer 120 will generally have an increasingly difficult time finding positions that require a Ph.D. training; and that within the inner 60, degree recipients from the top 10 or 12, including Michigan, will, even allowing for variations among fields, be relatively little affected by the "new depression" in higher education. Gresham's law does not apply in this area—the poorer will not drive out the better; quite the reverse. Michigan should be able, under these conditions, to secure an even higher percentage of the ablest Ph.D. candidates and they should generally be able to find suitable positions once graduated. The negative impacts will be largely concentrated elsewhere. And the many institutions recently planning to add Ph.D. work will find it difficult or even impossible to do so.

And in the area of research, with funds growing at a less rapid rate, if they grow at all in real terms, support is more likely to be allocated to the places that can make best use of it, including Michigan. The open handed funding of projects almost everywhere and anywhere is less likely to continue. As a consequence, academic quality is more likely to be increasingly concentrated where it already exists than to be spread more
widely as was happening until recently in a period of rapid growth. This is good news for a few; bad news for many—a little quiet rejoicing, but also many only partially hidden frustrations.

Staying at the top is possible, even likely; it is not, however, assured. The competition in the contracting universe of higher education will be intense. It will take:

Tougher decisions on faculty appointments and promotions; on what to subtract so that something else can be added; on reassignment of funds—the Carnegie Commission recommended that 1 to 3 percent of the existing budget each year be taken away from current recipients and reallocated elsewhere.

More careful decisions on where to grow—one major area, I believe, will be the creative arts.

More devotion to contact with the public—may I suggest particular attention to health care and to extension activity through the new technology.

Giving leadership in this new period will be difficult. Yet this is what is expected of Michigan. It has fully earned its credit as "mother of state universities." But that appellation really understates the contributions of Michigan. Before Eliot at Harvard and Gilman at Johns Hopkins, Tappan at Michigan had fought through the basic and bitter battles to create a modern university with attention to science and scholarship and
a research library. He was fired for his pains, and neither he nor Michigan, I think, got proper credit for the first creation of the research university in America.

Michigan has led in other ways. It first demonstrated that a state university could achieve high academic quality. A Select Committee in Michigan in 1840 had noted: "No State institution in America has prospered as well as independent colleges with equal, and often, less means." The record of Michigan subsequently made that observation no longer true. Michigan also pioneered in getting autonomy from the state. Your early constitutional provision (1850), giving to the Regents "general supervision" of the University, later became one model for California, and the two state universities with the greatest constitutional autonomy became the two great academic leaders among state universities. The battle for autonomy must be fought and fought again, as you have done recently here in Michigan. And now the federal government in some cases is seeking to impose more detailed controls than any state has ever attempted.

Leadership in this new period will be immensely difficult. There is no model to follow such as the German model that Tappan so confidently accepted. This time the United States must pioneer on its own. What new model or models, if any, should be developed? Overall models aside, there are many specific problems. What should faculty members do about collective bargaining? How should students best adjust to the new labor market situation? For young persons, not getting a degree will mean more adverse consequences for their careers than ever before but, paradoxically,
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adverse consequences for their careers than ever before but, paradoxically,
having a degree will mean less--both statements are true because there will be so many more holders of degrees. Not having a degree will be more of a disadvantage; having a degree will provide less assurance of an advantage.

Overall, the central problem is how to achieve intensive qualitative growth instead of, and in the absence of, extensive quantitative growth. This is a more difficult challenge than was the phenomenal expansion required in the 1960s--an expansion that more than duplicated in one decade the total growth of the prior 330 years. We knew how to do that and we did it. We do not yet know how to meet the new and more complex central challenge of today and tomorrow of how to assure intensive qualitative growth.

And so, in conclusion, we cannot say whether the next century for the American university will be characterized as golden, or as silver, or as what. It depends, in part, on what we all do. It depends, more than most places, on what is done here at Michigan with its long history of leadership in higher education.