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Research

the New Frontier



**A Formal Record
of the Dedication of New Laboratories**

October 3, 1950

AMERICAN MEAT INSTITUTE FOUNDATION

At the University of Chicago · Chicago · Illinois

Foreword

The American Meat Institute Foundation is a not-for-profit corporation, affiliated with and located on the campus of The University of Chicago. It was organized to engage in scientific research and education in the field of livestock production and processing and livestock product utilization, and began operations in 1947.

A new laboratory building for the Foundation recently was completed at 939 East Fifty-seventh Street, Chicago. Funds for the erection of this building and for the purchase of research equipment were contributed by several hundred companies of the meat packing and allied industries.

The Foundation's new laboratory home was dedicated on Tuesday, October 3, 1950. Dedicatory events included a luncheon at the University's Quadrangle Club, a formal program in Mandel Hall, and a tour of the Foundation building. Three addresses were delivered:

FOR THE AMERICAN MEAT INSTITUTE FOUNDATION

Mr. Thomas E. Wilson, Presiding
Chairman of the Board, Wilson & Co., Inc., and
Chairman of the Board, American Meat Institute Foundation

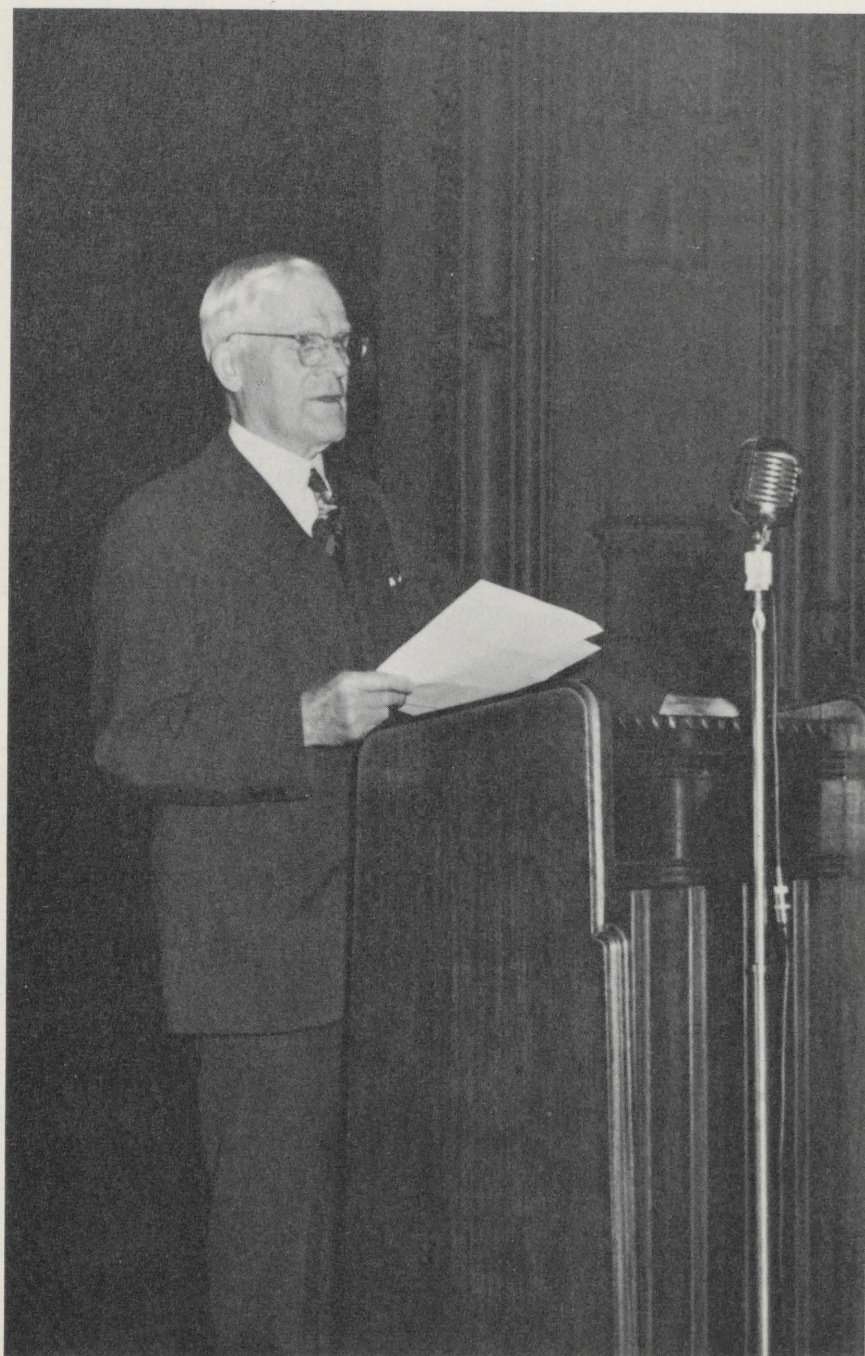
FOR THE UNIVERSITY OF CHICAGO

Mr. Robert M. Hutchins, Chancellor, The University of Chicago

FOR INDUSTRY

Mr. Laird Bell
Chairman of the Board, Weyerhaeuser Timber Company;
Chairman of Board of Trustees, The University of Chicago; and
member of law firm, Bell, Boyd, Marshall and Lloyd.

As a formal record of this program of dedication, the American Meat Institute Foundation and The University of Chicago herein reproduce the complete texts of the addresses by Messrs. Wilson, Hutchins and Bell, together with appropriate photographs of the events of October 3. The title employed on the cover is an excerpt from Mr. Wilson's concluding remarks.



Thomas E. Wilson

The Foundation— *its Origin and Purpose*

Address by Mr. Thomas E. Wilson, Chairman of the Board,
American Meat Institute Foundation,
and Chairman of Board, Wilson & Co., Inc.

One of the most significant and encouraging developments of our times is the broad and increasing effort to find better methods and new or improved products through research. Our economic system, wherein man advances according to his achievements, has provided the climate for such a development. Our research institutions have provided the tools.

The American Meat Institute Foundation typifies this trend. It is a cooperative venture of a great university and one of the nation's largest industries, seeking to open up new opportunities for progress, and to contribute further to America's living standards. I am confident that the dedication today of this new home of the American Meat Institute Foundation will be recognized in later years as a milestone in the growth and development of the American meat industry.

The history of research in the meat packing industry and the direct role it has played in transforming meat packing from a seasonal slaughtering business to a complex, scientifically controlled food processing industry is an inspiring story of progress. It is gratifying to me, as I am sure it is to everyone associated with the industry since research work first got under way.

Only 35 years ago research in our industry was practically non-existent. By World War I, several meat packing companies had developed quite sizeable research departments, but it was not until World War I that the need for an industry-wide research program became widely recognized. Meat became the subject of attack by many faddists and propagandists who claimed that meat was injurious to health. While they did not have the facts to prove these claims, we, unfortunately, did not have the scientific information to disprove them.

At the annual convention of the Institute of American Meat Packers in 1922, the members of the Institute adopted a plan for launching an educational and research program, and put out a call for voluntary contributions from members to raise a fund of \$50,000 a year for this special purpose. It was my privilege to be Chairman of the Board of the Institute at that time, and I clearly recall the courage it took to ask for these additional funds following the year 1921 when meat packers experienced severe financial losses from their operations. Nevertheless, the industry responded to the call, and the goal was reached almost immediately.

The Institute Plan Commission was formed to carry out this program, and a staff was employed. During the first two years most of the effort



was in the development of a program of education in cooperation with the University of Chicago, involving courses of training for men and women entering, or engaged in, the meat packing industry.

Two years later, in 1924, the first research laboratory for the American meat packing industry was started. It was then that we began our cooperative relationship with the University of Chicago in the conduct of meat research. Early in 1925 an agreement was signed by the two institutions whereby quarters were provided by the University on the campus for housing the laboratory, with the understanding that the Institute and the University would work together closely in conducting the meat research program. We have enjoyed the finest of cooperative relationships with the University in our research activities throughout this 25-year period.

The size of the staff and facilities were quite limited in the early years of the laboratory, but the results obtained were very valuable to the industry. Discoveries through this research provided the answer to a number of important practical problems that meat processors had been struggling with for years. Improved methods of meat curing, methods of controlling mold and discoloration of meats, and the development of methods for making better lard are only a few of the accomplishments of this small group of scientists that were almost universally put into practice by the industry.

The results of this work demonstrated the need for a vastly expanded program of research and more adequate laboratory facilities. As productive as this work had been, there remained many problems untouched that were of paramount importance, not only to the processor, but also to the livestock producer and the meat consumer. To fulfill this need, the American Meat Institute Foundation was formed in October, 1944.

The purpose of the Foundation was to carry on a broad and comprehensive program of research and education in the field of livestock production and utilization. More than one-half million dollars was contributed voluntarily by members of the American Meat Institute for the construction of a building to house the Foundation laboratories. A number of companies of allied industries made important contributions to the fund for equipping the building. Arrangements were made whereby the Foundation financed, and the University of Chicago constructed the building which we are dedicating today.

The Foundation conducts its program of research and education in harmony with the program of the University. A joint advisory committee of the two institutions serves to coordinate the programs in such a man-

← Wesley Hardenbergh, president of the American Meat Institute and of the Foundation; Laird Bell, dedication speaker and chairman of the Board of the University of Chicago; and Emery T. Filbey, vice-president emeritus of the University, leaving the new Foundation laboratory building following the dedication. For Messrs. Filbey and Hardenbergh the October 3 ceremonies were the culmination of many years of collaborative effort to project a major research program in the field of livestock production and utilization.



Dedication luncheon at Quadrangle Club.

ner as to attain the maximum benefit to the cooperating institutions and the public at large.

Another important objective of the Foundation is to aid in training technical personnel in the field of livestock processing. University graduate students in the fields of biological and physical science may carry on their thesis studies in the laboratories of the Research Foundation. Such students must meet all of the University's requirements, and the degrees are awarded by the University.

The program of the Foundation is now in full swing. About 40 well-trained scientists on the staff are now engaged in research which promises to be of real value to the public and to the industry.

Research involves exploring the unknown, and no one can predict with accuracy what the outcome will be, but since the past is prelude to the future, we may expect research to serve humanity to an even greater degree. It can improve the quality and quantity of our production of farm animals — and consequently, meat. It can make the products of the farm and ranch more valuable. Increasingly it will benefit growers, processors and consumers of meat.

But far beyond that is the fact that research is developing more and more products, many of them obtained from meat animals, which will prolong life, make it more pleasant to live, overcome the ravages of disease and restore the ill to good health. A good example is insulin, through which over two million Americans are kept alive and leading useful lives.

There are many other products now in experimental use which alleviate suffering, such as arthritis, and which will restore the individual to the health which should be his. We have learned much about nutrition and its effects upon the maintaining of robust health. We will learn much more, and much of this knowledge promises to come through medical and nutritional research.

All of these discoveries, of course, cannot come from the research activities of the American Meat Institute Foundation, but this Foundation can play an important role in many directions and can materially aid in correlating research and in translating theories into practice.

Developments in the cattle and beef business provide an indication of what can be done through research. For several years meat packers have normally sold beef at wholesale for less than they paid for the steer on the hoof. They have been able to do this in considerable degree because research has resulted in many by-products becoming of greater value. As a result, the meat animal has become more valuable to the meat packer who buys and thus more valuable to the cattleman who produces the animal. As this process goes on the producer has a greater incentive to produce more animals, and when he produces more animals a greater supply of meat becomes available for America's rapidly growing population. This is in the interest of every man, woman and child in the country from the point of view of good nutrition.

It seems there is almost no limit to the horizon of scientific research in the meat industry. In the light of our past experience we are justified in considering this Foundation as the finest investment the industry could make, and one that will provide the basis for further progress in the industry and greater service to the public. Here we have evidence that the pioneering spirit still prevails in America. In this modern age, research is our frontier!



Robert M. Hutchins

The Foundation

and the University of Chicago

Address by Mr. Robert M. Hutchins
Chancellor of the University of Chicago

The city of Chicago and the nation have been fortunate in the contributions which have been made to the enrichment of life and knowledge, the improvement of health and the expansion of industry through the development of the two great enterprises whose mutuality of interest is symbolized in these exercises today. The professors helped your industry pioneer in research with the result that in a quarter of a century the industry has been transformed and today supplies the American people with meat with a college education.

The University on its part owes much of its development to the guidance, leadership and magnificent support it has received from members of the meat packing industry. It is gratifying to me to greet you here today, and to express my appreciation for the pleasant association which the University has enjoyed with you for more than a quarter of a century.

The efforts of many men and many business firms have made possible the program of the American Meat Institute Foundation and the laboratory that we dedicate today. But we must unite in special mention of the leadership of Thomas E. Wilson, whose foresight and financial support brought this program into being. In his distinguished career he has built a great business, and won the lasting regard of your industry. The University of Chicago is grateful for the association it has had with him, and for the opportunity to realize his vision of the place of research in the meat packing industry.

This University is devoted to basic research. It has the facilities, the organization, and the staff that make basic research possible. Its accomplishments over the years have won for it a leading place among the research institutions of the world.

Fundamental to the progress it has made is the belief that free and independent research is essential to the advancement of knowledge. The best judge of the direction which research should take is the man who is doing the job. If his interests and the projects in which he engages are defined and limited by preconceived ends, or if they are solely directed towards specific, practical, marketable and speedily achieved results, his research is not free and has no place in a university. There is too much to do, too much yet to be discovered, to use the talents and the time of research scientists in a university for purposes other than those indicated by the development of their work itself. The ultimate practical value of such free research to industry, medicine and government has

been shown time and time again. Such research has continually resulted in the enrichment of life and the improvement of health for all mankind. Without the basic research which is the business of university scientists, there can be no steady progress in the laboratories of industry.

Business is usually not able to carry out basic research. The interdependence of knowledge demands the cooperative efforts of scientists in many different fields, and the costly equipment that is essential to basic research is far too elaborate for most businesses. Basic research requires an expenditure of time and a specialization of temperament that are sometimes not in harmony with the purposes of business. Great strides have been made in your industry through the research carried out in the private laboratories which you maintain. In very recent years some of the most dramatic and important developments in medicine have come from the research laboratories of the meat packing industry. Your research departments have found ways of using by-products and waste products for the good of all mankind. But this research is only possible because it has as its foundation the basic work to which this University is devoted.

Look at the location of the new laboratory. It is not only on the University of Chicago's campus; it is part of the University. It participates in the high scholarly standards and the devotion of purpose for which the scientists of this institution are known. The Director of your laboratory and the members of his staff meet and confer about their problems with the members of the faculty in their laboratories, in their offices and at the luncheon table. The interchange of ideas that takes place is characteristic of universities, and in particular of this one.

Throughout the years that the American Meat Institute has been affiliated with the University of Chicago you have seen the results of cooperation in research and of the availability of scientists in numerous fields whose knowledge and insights can be brought to bear on the problems in which you are interested. The erection of this building makes concrete that relationship and gives promise of faster progress.

Across the street from your new laboratory the University has built its three new scientific institutes and the laboratory it has erected to house its cyclotron and betatron. These institutes are staffed by scientists of the highest distinction who are working far out on the frontiers of knowledge. In the Institute for Radiobiology and Biophysics for example, members of the faculty are trying to understand the nature of growth, the behavior of the living cell, the control of bacteria, the effects of radiation on living matter, and many other important problems of scientific concern. Much of its work is likely to be of fundamental importance to the meat packing industry. Although by the nature of basic scientific research it is not possible to point to the immediate ends and effects, the promise of the future is very great.

New problems are certain to arise in your industry. At the same time, new solutions will be found to a variety of problems that the scientists at the University of Chicago will be studying. Your industry as represented by the Foundation will have the advantage of immediate proximity to the source of new knowledge. The University, particularly in the area of food and nutrition, will have the benefit of your research, criticism and suggestions.

We can forecast a long period of steady achievement from the research carried on in this new building, and in the University of which it is a part. Some of the scientists who will carry forward the research work of the Foundation will be trained at the University. Some of the students at the University will go on to work in research in your industry. The partnership benefits both partners.

For more than twenty years a contractual arrangement has existed between the American Meat Institute and the University of Chicago. As originally conceived, that contract covered all the possibilities and terms of the relationship. It has been violated with frequency and disregarded by both sides. It is the best kind of contract that there is. For far beyond any stipulations of contractual agreement, the relationship between the Institute and the University has proved of marked value to both, and has been carried forth in a harmonious and friendly manner. I know that in the future as in the past the relationship will continue in the same spirit.



Laird Bell

Research

from the Viewpoint of Industry

Address by Mr. Laird Bell

Chairman of the Board, Weyerhaeuser Timber Co.;
Chairman of the Board, The University of Chicago;
Member of law firm, Bell, Boyd, Marshall and Lloyd.

I am not sure that the management has been quite ethical in billing me to speak "For Industry." It is true that as time has gone on I have gotten somewhat tangled up in industry, but I have also gotten tangled up in university administration. Perhaps, however, that does not disqualify me from considering the stake industry has in forwarding the kind of work that we can expect of the American Meat Institute Foundation. At any rate, I shall try to look at the matter from both sides of the table.

You are about to inspect an austere handsome building put up by the Foundation and admirably equipped to do the highest quality of research into the scientific facts concerning meat — to make every steak perfect, as a newspaper has recently said. But a building won't function by itself. The excellence of what is done in the building is more important than the excellence of the building. It is my plea that industry recognize the importance of making the building productive.

There is no need to argue for research any more. No business considers itself respectable these days unless it has some laboratories and spends some money on research. Stockholders' reports are full of pictures of handsome young men in white coats looking at test tubes. The idea of research has, it is true, been debased somewhat. There is a tendency to feel that you put a nickel into the machine and take out a bottle of research. There is, however, enough serious research going on in industry to make it clear that managements believe that the genuine article is worth paying for. The astounding technological developments of American industry are largely attributable to research already done. And the lengths to which it may go simply pass imagination.

Much of this research has been done in industry's own laboratories, but there are definite limits to what can be accomplished there. Such research must be pointed directly at producing a product or process that will create a profit in the near future. But nature doesn't have her secrets departmentalized in divisions that correspond neatly to businesses and the scientist who starts to run down one line of inquiry may presently find himself being drawn into a different field. If it is one that profits his employer nothing he must drop the scent no matter how hot it may be.

Business men, too, have a natural dislike for turning a man loose in their laboratories and letting him follow his own devices without direc-



Guests entering Leon Mandel Hall for Dedication Program.

tion toward a demonstrably useful end. Yet that same apparently useless and aimless kind of investigation is the origin of a great deal of highly useful discovery. Men have said to me that if they are going to pay a scientist they want him to do an assigned job and they want to be able to hold him responsible for results in that job. Executives don't like to have many theorists around. In fact, in business vocabularies the word "theoretical" is one of reproach. Yet it is clear that a vast amount of our technological advance, of so-called applied science, is based upon and uses the discoveries of the theoretical or pure scientist, of whose existence the practical man is often hardly aware.

A great many revolutionary discoveries have resulted from just the plain curiosity of some theoretical scientists poking around in the mysteries of nature. A few instances from our own scientist at the University are illustrative. Let's begin with the elements — I mean hydrogen and lead and so on. The late Professor Dempster, of the Department of Physics, spent the greater part of his life in the determination of the isotopic composition of the elements which are present in nature. I assume that you understand what an isotope is better than I do. All I know is that it is an element that has gone a little off the beam and lost a proton or two. It doesn't have the atomic weight that it ought to have. This may not have seemed very important, but it turned out to have considerable significance. A few years ago, shortly before the beginning of World War II, Professor Dempster was interested in the determination of the isotopes of uranium. In the course of this study he discovered a new isotope, U-235. This was found to be fissionable and the material served as the essential component of the first atomic bomb. The practical impact of this is only too well known. It is, however, now being used also for the development of atomic reactors for power.

In the field of chemistry, Professor M. S. Kharasch, in his early years, got interested in the chemical behavior of organic compounds of mercury containing different organic groups. One of the primary purposes of the study was to determine the relative activity of these groups in chemical reactions. It was subsequently found that some of these mercury compounds were particularly valuable as disinfectants for seeds. As a result, approximately 90 per cent of all the seeds used in the country today are disinfected with these substances. The disinfecting process has led to a marked increase in the percentage of seeds that germinate and to better yields of the agricultural products. These studies also led to the production of merthiolate, an antiseptic which has been well known to all of us for a number of years. Twenty years after Professor Kharasch's first efforts in this useless and theoretical study, the practical benefits of his work were recognized by the award of the John Scott Award for this "application of fundamental science to the benefit of mankind."

Royal J. Haskell of the United States Department of Agriculture, speaking at the dinner at which Mr. Kharasch was awarded the John Scott Medal, said:

"A survey by a large grain company in the spring wheat area concluded that 62 per cent of the wheat, oats, barley and rye acreage in Minnesota, North Dakota and South Dakota was sown with treated seed. Based on normal losses of untreated seed and assuming government support



Audience enjoys impromptu quip by Laird Bell during program in Mandel Hall.

prices, the increased return to farms in the three states mentioned was over \$19,000,000 for the four grains.

"Prominent pathologists estimate that treated seed saved the farmers of Kansas in 1947 five million bushels of wheat, 7.5 million bushels of oats, 5.75 million bushels of grain sorghum and 370,000 bushels of barley. At prevailing grain prices the saving would amount to nearly \$28,000,000."

Again in the field of chemistry, Professor Hermann I. Schlesinger, in the early 1930s, became interested in the fundamental chemistry of the hydrogen compounds of boron. His discoveries led to an entirely new class of compounds, known as the borohydrides. During the war he was called upon to apply these discoveries to the Atomic Energy program and to the production of a light source of hydrogen, easily transportable in the field, for use by the armed services. After the war these substances found many other industrial applications, particularly in the synthesis of vitamins on an industrial scale which is now being carried out successfully in a number of industries.

I will inflict only one more example on you. Years ago Dr. Frank Lillie and Professor Newman of the Department of Zoology became interested in the effects of certain glandular substances on growth. Later it was learned that these substances influenced the production or non-production of a certain type of twin, not a particularly useful activity. Following this earlier work, Professor Carl Moore studied the effect of these substances on animals, using the opossum and the chicken as subjects, and found that some of the growth-promoting hormones were so powerful that they could change the sex of an animal backward or forward. Then Professor Koch in the Department of Physiological Chemistry and Pharmacology extracted some of these hormones in pure form. The next step in the chain of events was the demonstration by Dr. Huggins of the Medical School that cancer of the prostate could be brought under control without surgery by injecting the cancerous male with femal sex hormones. Finally the use of hormones in the treatment and relief of symptoms for a multitude of diseases has attracted international attention. Few realize, however, that ACTH and cortisone probably could not have reached their present state of importance without the knowledge obtained by a small group of scientists who were busily working to unearth some basic scientific facts without too much immediate concern about applications. Incidentally, throughout these basic investigations, substantial support for this work came from the meat packing companies. Some of this support was in the form of direct financial grants. The companies also cooperated by making available the materials necessary for the investigations.

You will have noticed that the last case involved three different brands of scientists — zoologists and chemists and finally medical men. Such teamwork and complementary activities are possible in a university. Few businesses could afford to maintain research staffs in zoology and chemistry and medicine, and if they did they would probably find that they hadn't picked the right branches of science for the particular thing under development. A university, on the other hand, attempts to cover the whole waterfront of science, or at any rate the major part of it. You will notice when you come to go through the Foundation building that, impressive as it is, it is surrounded by even larger buildings. This is symptomatic.



Dedication guests tour new Foundation laboratories.

These other buildings are full of men, digging away at the kind of problems I have mentioned and prepared to supplement the efforts of the men in the Foundation. Foundation workers have a call on practically the whole range of science.

Only two or three great corporations have undertaken pure research on their own. For it has become a very expensive game. It has to be played more and more with blue chips. Cyclotrons and betatrons and the like are costly paraphernalia and last year's cyclotron can easily become a mere curiosity when somebody thinks up a better gadget. It isn't a game that many individuals can sit in on any more.

Yet so long as man continues to be an animal full of curiosity, research is sure to get done. It is worth noting that government has shown itself willing to step into the breach. Private enterprise doesn't like government in business. But if government becomes the sole or chief agency of unlocking the secrets of nature that make possible better processes and products government will be in business in earnest and private enterprise will not be consulted much. It is unwise to give the government the right to say, "You left me alone to develop this thing. I propose to exploit it, and don't you come around after I have succeeded to ask to get in on the benefits." Vast sums are evidently going to be spent by government for scientific research. It behooves industry to keep ahead of government, at least in its own field.

At about this point in the argument for industry support of research, counsel used to step in and sometimes with ill-concealed satisfaction assert that corporations have no right to give away the stockholders' money. I doubt whether this was ever the law as applied to the support of research in an industry's own general field. Certainly there are no cases in the books in which a stockholder has successfully attacked such contributions, and the Treasury Department has been repeatedly repulsed when it tried to disallow deductions for educational purposes. Today 19 states, including Illinois, have laws specifically authorizing corporate gifts to charity. It may be significant of the trend of the times that all but two of these have been adopted in the last six years. The law follows custom, albeit somewhat sluggishly, and it certainly has become respectable for corporations to make contributions. In the ten years following the passage of that provision of the Revenue Law which allows the 5 per cent deduction for charity, corporate contributions increased from thirty million to two hundred and sixty-five million a year. I believe it safe to say that that particular alibi for not giving is increasingly thin.

Not only is such giving permissible, it has become almost fashionable. In our own case corporation contributions toward various projects at the University of Chicago, including the Nuclear Institutes, have accounted for \$781,000 in 1948-49 and \$1,007,000 in 1949-50. There is every indication that this support will continue to increase. This is in addition to support of your Foundation research program. The list of contributors reads like a blue book of the progressive leaders of industry. And the meat industry is far toward the top of the list.

Some voices are being raised, chiefly from the left, asking whether corporate support of education does not carry the danger of domination by business interests. My answer to this is to invite the inquirers to look at the institutions of America today. Despite the overwhelming growth of

state supported institutions, nearly half the students of college grade are still in privately supported schools. And where did that support come from? It seems safe to say that every building and every dollar of endowment in the privately supported schools has come from business men directly or indirectly in one form or another. Yet no fair-minded person would say that these schools are dominated by business. The leadership of some schools, it must be admitted, has succumbed to the temptation to curry favor openly with what it believes to be the views of business men. But I think you will agree that there has been more complaint the other way.

Besides, it is high time that somebody should stand up somewhere and say a word for that much abused figure, the business man. I don't contend that he is always a lily-white altruist or that he always takes the far-sighted view on social matters. But he does make the wheels go around in an economy that has achieved the admiration — and the envy and hatred — of the world. He takes the risks, he struggles with labor, he fights his way through a maze of laws and taxes and regulations and he is almost the only fellow left that doesn't expect something for nothing. He doesn't wait for a governmental planning agency to lead him by the hand to better things. When he sees a sound opportunity for improving his process and products it is he that bets on it. The building you are about to see is witness to that kind of vision. We hope you will like it. Speaking from both sides of the table, from the point of view of industry and of the University, I bespeak your continued support of the activities that we hope will fill it.