

DEDICATION EXERCISES

PRESIDENT HULLIHEN, Presiding

Herald: Professor W. O. Sypherd

PROCESSIONAL

INVOCATION The Most Reverend Edmond J. FitzMaurice

DELIVERY OF THE KEYS OF THE BUILDING C. Z. Klauder, Architect

ACCEPTANCE OF THE BUILDING

For the Trustees W. H. Heald, Esq.,
President of the Board of Trustees

For the Faculty Walter Hullihen,
President of the University

For the Department of Chemistry Albert S. Eastman,
Professor of Chemistry

MUSIC

GREETINGS

National Association of State Universities
Professor Wilber E. Bradt, University of Maine

Association of Land-Grant Colleges and Universities
Dean Jacob G. Lipman, Rutgers University

Association of American Colleges
Dr. Guy E. Snively, Executive Secretary

General Alumni Association Archie H. Dean, Class of 1914

MUSIC

CONFERRING OF HONORARY DEGREES

Warren K. Lewis, Professor of Chemical Engineering,
Massachusetts Institute of Technology

Presented by Dean Robert L. Spencer

Frank C. Whitmore, Dean of the School of Chemistry and
Physics, Pennsylvania State College

Presented by Professor Quaesita C. Drake

The Svedberg, Director of the Institute of Physical Chemistry,
Upsala University

Presented by Professor George H. Ryden

BENEDICTION

The Reverend Charles L. Candee

RECESSIONAL

DEDICATION EXERCISES

PRESIDENT HULLIHEN, Presiding

The Academic Procession moved down the campus, and took position in front of the new Chemistry Laboratory Building. The Herald, Professor W. O. Sypherd, announced the order of exercises. The following Invocation was pronounced by The Most Reverend Edmond J. FitzMaurice, Bishop of the Catholic Diocese of Delaware.

O Father in heaven, in Whom we live and move and have our being! Upon these exercises here today, and upon this latest building, which enriches both culturally and artistically this goodly seat of higher learning, pour forth, we pray Thee, the benediction of Thy holy favor. To Thee do we turn, O God, in all our undertakings, even as did our fathers in this nation from the beginning, being conscious and humbly confessing that except Thou dost build the house, they labor in vain that build it.

Bless then, we beseech Thee, this—our latest house of service, bring to it salvation as Thou didst to the house of Zacchaeus, make it ever a sacred fruitful place, rich in blessings to the entire community.

Bless those who are its sponsors, and renew in their hearts today the lofty inspiration and noble sentiments that called it into being.

Bless also its teachers, make them earnest seekers after truth, fill their minds with knowledge and the spirit of true wisdom.

And bless, in particular, the young men and women who will make use of its facilities, and who will be, accordingly, its principal beneficiaries. Give to these young people, O Lord, healthy bodies, clean hearts, and keen, discerning minds. Grant them light from above that whatever they are taught within these walls they may grasp, and afterwards recall and practice. Advancing daily here in secular knowledge, may they also grow, as did another Youth of yore, in grace and wisdom to become in due time not merely learned, but also virtuous men and women—men and women of character and purpose, who

will cherish our country's ideals, who will perpetuate its standards, and who, with the passing of the older generation, will maintain and continue that peaceful, orderly, enlightened progress in city, state and nation, which is the oldest, dearest, and best of our American traditions.

These things we ask of Thee, Father above, in the name of Him Who is the Way, the Truth, and the Life, Jesus Christ, Thy Son. Amen.

The delivery of the keys of the building was then made by C. Z. Klauder, the Architect. The building was accepted for the Trustees by W. H. Heald, Esq., President of the Board of Trustees. Acceptance of the building for the Faculty was made by Walter Hullihen, President of the University.

Mr. Heald - Lieutenant Governor Cooch - honored colleagues of our sister colleges - representatives of the learned societies - ladies and gentlemen:

It would be hard for me to express the degree of pleasure I have in accepting the keys of this building, for they represent the realization of a dream of many years in a form far beyond anything the original dream dared to hope for.

Eight years ago when I asked the department of chemistry to outline a plan for a building in which to house its work, which I specified should be "as *modest* in its demands as efficiency would permit," I had little thought that a friend would be found so generous and so deeply interested in the college and the effectiveness of its work in science as to be willing to provide such a building as the one we are gathered here today to dedicate; for, in regard to it, the donor's only stipulation was "that it must be planned and equipped to give instruction in accordance with the severest demands of modern scientific knowledge."

That was a rare experience in the life of a college president and it has been a veritable joy to share in the work of planning this building and its elaborate and complex equipment; a task in which our Committee is happy to acknowledge most gratefully the appreciated assist-

ance of members of the duPont research staff, in particular of Mr. Thomas Chilton, whose expert knowledge and broad practical experience have been invaluable.

Such a day as this—marking so great a gift—is truly an epochal event in the history of this college. Who can estimate the long reach into the future of the influence of such a gift on thousands upon thousands of the young people of this state for whom it will provide unsurpassed facilities for training in the great branch of science which, it has justly been claimed, is in very truth transforming the world.

And so, in accepting this splendid gift, it is my desire on behalf of the Faculty to express to our generous benefactor our deep and sincere gratitude; to the architect, our appreciation of the high art with which he has here blended beauty with utility; and to the representatives of the institutions of learning, who have so generously come together to rejoice with us in our good fortune, our pleasure in the honor of their presence at the dedication of this laboratory to the purposes for which it is intended.

Its keys I shall now turn over to the one man for whom this may be as happy a day as for me—the head of the department of chemistry—Professor Eastman.

For the Department of Chemistry the building was accepted by Albert S. Eastman, Professor of Chemistry.

President Hullihen and Friends:

This building is indeed a dream which has come true. It is a magnificent gift in which we take great pride. My only regret is that the donor prefers to remain anonymous. He has rendered a service to the state, which the people of Delaware will not forget.

We wish to express our appreciation of the work of the architects and engineers who cooperated so successfully in the design, and especially do we wish to acknowledge the efficient services of the construction engineer in

direct charge of the work. Due to the unusual interior arrangement, the architect has been able to put much into the building that would not have been possible with less skillful planning.

We had hoped to be able to show today a laboratory with all equipment in place. Although the additional equipment needed has been provided for, there is much that has not yet been installed, on account of a long series of delays in construction.

Speaking for my associates in the Department, as well as for myself, I wish to say that in accepting this building, which is so well fitted for our work, we are conscious of a great responsibility, and of a great opportunity for service.

Greetings from the National Association of State Universities were brought by Professor Wilber E. Bradt, of the University of Maine.

Mr. Chairman, Fellow Scientists, Ladies and Gentlemen: The building which we are dedicating is not only an efficient and beautiful structure of steel and brick. It is something much more worth while. This new laboratory is a recognition of the ability and accomplishment of the chemistry faculty of the University of Delaware. It is an acknowledgment of the inspiring leadership and efficient instruction which has come from this Department to the young men of the state.

This building is an opportunity tendered to the University of Delaware, not only to continue its now very superior research and teaching, but also to increase its service to the state and to the nation in the field of chemistry and chemical engineering.

Further, this laboratory is a responsibility not to be taken lightly. It is now the duty of the administration and the chemical engineering staff to produce in this splendid building greater discoveries, more valuable contributions to human welfare and happiness, and better training for the students of the future than has yet been possible.

Therefore, President Hullihen, on behalf of the American Association of State Universities, I congratulate you and the University of Delaware for the accomplishments which have brought recognition in the form of this beautiful and efficient laboratory, for the opportunities which it offers to your men of science, and for the inspiring future which it symbolizes.

Greetings were brought from the Association of Land Grant Colleges and Universities by Dean Jacob G. Lipman, of Rutgers University.

There is a group of institutions of higher learning known as the Land Grant Colleges and Universities. The University of Delaware is one of them. They came into being through an act of Congress, signed by President Lincoln in 1862. They were dedicated to education in agriculture and the mechanic arts, not excluding liberal subjects. Another act of Congress, in 1887, attached to each of these colleges a department designated as the agricultural experiment station. Still later, in 1914, congressional action provided for the support of extension education in agriculture and home economics. The institutions thus created by Federal legislation became the recipients of financial support from their states and counties. They organized themselves into the Association of Land Grant Colleges and Universities. Aware of their common aims and objectives they have dealt ably with their programs of resident teaching, research and extension. The system of education and research which they have established is being developed from the national, as well as from the local point of view. Altogether, their activities have been wholly human and inspiringly constructive.

But this is neither the time nor the place for a discussion of the genesis and evolution of our Land Grant Colleges and Universities. Rather, as we dedicate this building to service in the field of chemistry we must remind ourselves of what this science has meant to agriculture as an industry and an art. Aristotle, and others before him, pondered over the mysterious processes in

soils, plants and animals. The alchemists were, if not more critical, at least more fortunate in their approach. The day of quantitative measurements came after the middle of the eighteenth century. A great adventure in science had dawned upon mankind. The chemical nature of rocks, soils, plants and animals, and of water and air was gradually revealed to us. Methods of analysis and synthesis helped to expand our knowledge and understanding, and chemistry pointed the way to a more varied, more skillful and more progressive agriculture.

But what about the Land Grant Institutions? Have they merely suggested the application of knowledge created elsewhere, or have they too, been the seekers of new knowledge and the creators of new learning? The answer will be found in departments and buildings such as these. We are happy today because we are participants in the dedication of new facilities of service in the field of theoretical and applied chemistry. From within these walls there will come men and women trained to see and understand. Thought will be given here to the system of soil, water and air, the circulation of carbon and nitrogen, the building of plant and animal cells and the analytical and synthetical processes, and of life unfolding and passing and unfolding again. Yes, this and other Land Grant Institutions have made, and will continue to make, important contributions in the fields of organic and inorganic chemistry. They have dealt, and will continue to deal, with principles and processes, with the building of better soils, better plants and better animals. As heretofore they will build toward a more abundant life. Their task is a pleasant and fruitful one. It is the task of learning and of understanding and of passing such learning and understanding into circulation. It is my pleasant duty to bring to you the greetings and good wishes of the Association of Land Grant Colleges and Universities. It is my wish for you that this building bring you the utmost of joy and satisfaction and that the material and human values that you will create here will

be returned a thousand fold in human happiness and progress.

The Association of American Colleges sent greetings by Dr. Guy Snively, its Executive Secretary.

It was my good fortune to be born in Maryland and to have been reared a few miles from Havre de Grace. In consequence, I have had an opportunity to come by this community from time to time. I have noted with interest and pride the progress being made at the University of Delaware. I have been particularly impressed with the improvements made since my Johns Hopkins contemporary and your distinguished president assumed his duties here.

Doubtless Doctor Hullihen feels at times like my neighbor friend in Alabama, where I have been serving for the past sixteen years as a college president.

Rastus had reached a ripe old age as a tenant farmer on a large plantation. The plantation owner finally realized that Rastus was too old to continue hard work; so he offered him, with apparent generosity, a deserted piece of land at the junction of two deep red clay gullies covered with sassafras bushes and scrub pines whereon the old Negro could establish a home for his declining years.

Within a short time, Rastus had developed the abandoned plot so that he was raising watermelons, sweet potatoes, and a few pigs. The local Baptist preacher coming by accosted Rastus with the remark that he had accomplished surprising wonders with his little home plot.

"In fact, Rastus, you and the Lord have accomplished a miracle," said the preacher. Rastus immediately responded, "Yassuh, yassuh, boss, but you oughta seen this piece of land when the Lawd had it by his self."

In addition to complimenting the University of Delaware on its general progress, it is my keen pleasure to offer congratulations and bring greetings from the

Association of American Colleges on this celebration of the addition of the fine chemistry building to the equipment of the University of Delaware, an honored member institution.

With the magnificent appointments of the new chemistry building, better opportunities for scientific study are quite apparent. Liberal culture, for which our association stands, will insist upon a curriculum including the fundamental sciences. Ever will continue the search for the truth. The Association of American Colleges rejoices that the University of Delaware has this added facility in its quest for the advancement of truth and higher education!

The General Alumni Association of the University of Delaware sent greetings by Archie H. Dean, Class of 1914.

Dr. Hullihen, Honored Guests, Ladies and Gentlemen:

It is a privilege to represent the Alumni Association of the University of Delaware at the Dedication of this magnificent Chemical Laboratory Building.

Those of us who studied here more than twenty years ago well remember the dingy, poorly ventilated, one room laboratory that Dr. T. R. Wolf, and later Dr. Chas. L. Penny, used for training Delaware students in Chemistry.

After that, Wolf Hall was provided. Now, Delaware students have inherited this wonderful building. They have fallen heir also to the opportunity to prove to the generous donor of these laboratories by their work here at Delaware, and by their accomplishments in later life, that he has invested wisely in their training.

What service can the Members of the Alumni Association offer to the students who are going to justify the establishment of these laboratories?

I believe that the greatest contribution our graduates could make would be to bring back from their life's experience that knowledge which is not learned from books.

Dr. Eastman has at his command such men as Mr. Robert B. Wolf, of the Class of 1896; Mr. W. F. Harrington, of the Class of 1902; Dr. William R. Wharton, of the Class of 1903. These graduates, by drawing upon their outstanding experiences and accomplishments, could give to Delaware students an insight into chemical work that should be of invaluable assistance throughout the student's life.

Mr. Wolf could tell the student how to be a leader in the pulp and paper industry. Dr. Wharton, who presides over the largest Government food and drug inspection laboratories, certainly has a message that no student could afford to miss. Mr. Harrington might want to explain the formula for moving from laboratory work into production, and then on to management activities.

Another alumnus who has contributed, and is still contributing, to the training of chemists is Dr. W. Owen Sypherd, of the Class of 1896. As head of the Department of English at Delaware, Dr. Sypherd has been responsible for training Delaware students in the use of words. It is absolutely necessary for chemists to have a good training in the ability to express in words by means of reports, and by verbal explanations, the work they have accomplished in the laboratory.

Recently, a friend of mine who moved from laboratory work to production work increased his salary 500%, because of his ability to put into words what chemists under his direction had accomplished in the laboratory. His words caused Directors to act. In production operations he has, by the use of well chosen words, silenced labor agitators, because his co-workers were shown the fairness of their employer's management.

In marketing chemical products, the chemically trained salesmen must use every day the training received in English. Students would do well to grasp the opportunity for excellent training in English here at Delaware.

In the recent issue of Chemical and Metallurgical

Engineering there is a survey of the American Chemical Industry. The leading company, from an investment standpoint, has its home office here in Delaware. That Company's motto is "Better Things for Better Living Thru Chemistry."

A motto for students who will be trained in these Laboratories might well be—

"Better Chemists for American Industry Thru These Laboratories."

Honorary Degrees were then conferred upon the following gentlemen:

Warren K. Lewis, Professor of Chemical Engineering, Massachusetts Institute of Technology. Presented by Dean Robert L. Spencer.

Mr. President:

I have the honor to present to you Warren Kendall Lewis.

Professor Lewis was born in Laurel, Delaware, in 1882 and gained his first education in the public schools of that little Delaware town.

Professor Lewis has earned his greatest distinction as a teacher of chemical engineering. In preparation for his life career he was graduated from the Massachusetts Institute of Technology in 1905, receiving the degree of Bachelor of Science after completing a course of study which he tells us was essentially that of a mechanical engineer. After serving his Alma Mater as a Laboratory Assistant in Industrial Chemistry for one year, he went to Germany to study pure chemistry at the University of Breslau under Abegg and Ladenburg and was granted the degree of Doctor of Philosophy in 1908. Returning to the United States he became Chief Chemist and Superintendent of Power for the W. H. McElwain Company where he became intimately acquainted with the mechanical and chemical problems encountered by an industry handling colloidal materials.

With this background and training in mechanical engineering, pure chemistry, industrial chemistry, and industrial problems the young Doctor of Philosophy was well fitted for his life work as an engineering educator. In 1910 he became Assistant Professor of Industrial Chemistry at Massachusetts Institute of Technology in what was then called the Research Laboratory of Applied Chemistry, to develop that branch of engineering which we now term Chemical Engineering. In this development and in collaboration with Dr. Walker and Professor McAdams he wrote the first standard textbook in Chemical Engineering. In 1915 he became Professor of Chemical Engineering and in 1921 took charge of the department.

Throughout his brilliant career Professor Lewis has enhanced his usefulness as a teacher and extended the field of his influence beyond the walls of his own Institute by means of his textbooks, his technical writing, his consulting chemical engineering practice in the fields of rubber, textiles and petroleum, and his research work, during the World War, on gas defense problems in the Chemical Warfare Service.

For his work as a teacher and chemical engineer Professor Lewis was awarded in 1936 the Perkin Medal of the Society of Chemical Industry.

Distinguished as a practicing engineer, as a research worker, as a writer of textbooks and technical articles, and above all as a great teacher, Professor Lewis has brought honor to the State which gave him birth and the nation which he has so brilliantly served.

It is now my pleasure and honor to present Professor Lewis to you with the recommendation of the Faculty and Trustees of this University that he be granted the honorary degree of Doctor of Science.

Frank C. Whitmore, Dean of the School of Chemistry and Physics, Pennsylvania State College. Presented by Professor Quaesita C. Drake.

Mr. President:

I have the honor to present Frank Clifford Whitmore, Dean of the School of Chemistry and Physics of the Pennsylvania State College and President-elect of the American Chemical Society.

Born in North Attleboro, Massachusetts, in 1887, Frank Whitmore spent his boyhood in our neighbor states, Pennsylvania and New Jersey, and returned to New England to matriculate at Harvard. From this university he received his bachelor's degree in 1911 and his master's degree in the following year. Here, in an environment rich in chemical tradition, he carried out his first research work on sodium malonic ester under the direction of Dr. Charles Loring Jackson, receiving the degree of Doctor of Philosophy in 1914.

After several years of teaching at Williams, Rice Institute, and the University of Minnesota, Dr. Whitmore in 1920 went to Northwestern University as Professor of Organic Chemistry. Later he became head of the department. In 1929 he went to the Pennsylvania State College as Research Professor of Organic Chemistry and Dean of the School of Chemistry and Physics.

During all these years his research work has gone steadily on. Over 100 research papers have been published. His earlier work on the organic compounds of mercury made him an authority in that field and resulted in the publication of one of the monographs of the American Chemical Society series. His more recent work has been in the general field of the aliphatic compounds, particularly saturated alcohols and olefins. In recognition of his researches in the polymerization of olefins and in molecular rearrangements, the New York Section of the American Chemical Society last year presented to him the William Nichols Gold Medal. In March of this year his *Advanced Organic Chemistry*, the most comprehensive survey to have been published in this country, appeared.

Dr. Whitmore has served as chairman of the Section C of the American Association for the Advancement of Science, as the chairman of the Division of Chemistry and Chemical Technology of the National Research Council, as secretary and chairman of the Division of Organic Chemistry of the American Chemical Society. He has been director of the American Chemical Society since 1928. Last December this Society expressed its confidence and admiration by electing him as its president for 1938.

A scholar who gets fun out of research, an administrative officer whose charm has made friends for him in all parts of the country, an enthusiastic and inspiring teacher; it gives me very sincere pleasure to present him to you as a candidate for the degree of Doctor of Science.

The Svedberg, Director of the Institute of Physical Chemistry, Upsala University. Presented by Professor George H. Ryden.

Mr. President:

I have the honor to present to you for the honorary degree of Doctor of Science, Professor The Svedberg, of Upsala University.

Professor Svedberg, internationally known scientist, is head of the Physical Chemistry Institute of Upsala University. He is a member of the Swedish Academy of Science and of many other scientific societies throughout the world. In 1926 he was awarded the Nobel prize in Chemistry for his outstanding work on the formation of colloids, and since that time has been devoting his prize-money exclusively to the furtherance of additional research. He gave one of the first and most tangible proofs of the existence of molecules and has thrown new light on some of the most difficult problems of photography.

Doctor Svedberg's greatest contribution to science is his invention of the so-called ultra-centrifuge. There are seven of these powerful pieces of apparatus in the United States, two of which are at the University of Wisconsin, one at the Rockefeller Institute of Medical Research, one at Princeton University, and three in the

laboratories of the E. I. duPont de Nemours Company, of Wilmington, Delaware. This extraordinary invention establishes the molecular weight of large molecules such as albumins and other complicated organic compounds. It is of enormous importance in the study of metabolism, both in plants and in animals. At its tercentenary celebration a year ago, Harvard University, in conferring the honorary degree of Doctor of Science upon Professor Svedberg, fittingly described him as "a man who sees beyond the microscope."

We realize the significance of this characterization as we sum up his manifold and diverse activities. He is a theoretical scientist, a practical inventor, a stimulating teacher and lecturer, a writer of remarkable power and lucidity, and, in the course of a busy professional life, he has also found time and energy to concern himself as an amateur in the art of painting and in the science of horticulture. *Nihil humanum illi alienum est.*

On the occasion of the opening of this chemical laboratory, dedicated to the advancement of a great science at the University of Delaware, it is very fitting, Mr. President, to honor a man who so thoroughly exemplifies the spirit of scholarship and research and who so boldly is blazing a trail into the unknown for kindred minds throughout the world.

We stand, Mr. President, on the threshold of the Delaware Tercentenary. It is therefore especially appropriate to present to you for the highest honor that our University can bestow a distinguished son of Sweden, a country which has not only enriched the world in times past with many notable scientific discoveries, but which also founded on American soil three centuries ago the Colony of New Sweden, and sent to the State of Delaware our first permanent settlers.

At the close of these exercises the Benediction was pronounced by the Reverend Charles L. Candee, D. D.

The last event of the day was a luncheon offered by the University of Delaware to the delegates who had attended the Dedication and Conference on Chemistry and Chemical Engineering. At this luncheon the Honorable Martin Kastengren, Consul of Sweden in New York, offered his congratulations and good wishes with the following remarks.

Mr. President, Ladies, and Gentlemen :

It is a great pleasure, indeed, for me personally and in my official capacity to attend the dedication of the new Chemical Laboratory of the University of Delaware and other functions connected therewith. I am most grateful for the kind attention that has been shown me by the University authorities and beg leave to express my sincere and hearty thanks for the very cordial reception which has been extended to me. Let me, in this connection, also convey to the University of Delaware the greetings of His Excellency the Swedish Minister in Washington, who to his very great regret could not come here, as he had to attend another important function these days in Massachusetts.

The dedication of your Chemical Laboratory is a great event in the history of this center of learning. The gathering here of distinguished men and women in science from far and near bears eloquent testimony to the national and international significance of this occasion. Science, like music, knows no frontiers. I heartily join in the felicitations which the University of Delaware has received this morning and I wish for the University continued progress in carrying on its very important work in expanding the horizons of knowledge and inspiring in coming generations love and respect for learning.

I do not think I exaggerate when I say that the University of Delaware is an institution in which my country is particularly interested. The reason is obvious, for, on the shores of the Delaware River there arrived on The Kalmar Nyckel (Key of Kalmar) in 1638—only 18 years after the Pilgrims at Plymouth—Swedish colonists, who were the first permanent white settlers in this

state. They established European civilization in the Delaware Valley; they built the first churches, and brought over the first school-masters. Among them came the first scientists and engineers, and they held the first law courts and organized the first permanent forms of civil government.

The tercentenary of this event will be celebrated in Wilmington and Philadelphia next summer. The Swedish Government has been invited by President Roosevelt to participate in the celebration, and an official Swedish delegation headed by the Crown Prince of Sweden will come here at that time.

In the plans for this celebration there have been included a series of lectures by leading Swedish scientists to be delivered at American universities during the present academic year. As a member of the Committee of Arrangements I avail myself of this opportunity to thank the University of Delaware for having invited Professor The Svedberg to inaugurate this series of lectures.

The last time that I heard Professor Svedberg speak, prior to his appearance yesterday, was in the school of my home town in 1901. It was at the morning prayer, when one of the boys in the highest class had to read a prayer. Professor Svedberg was rather exceptional already at that time, and when his turn came, he did not follow the set text of the prayer-book, but actually was the author himself of the prayer, which he delivered without any text-book before him. Another memory that I have of him is that he installed a piece of apparatus in the school yard—it was a wireless set which then was new to the world, and which he was demonstrating to the teacher and students in physics.

We all wondered at that time what would become of this school-boy, and he certainly has not disappointed our hopes. I felt great pride when he received the high distinction of a Nobel Prize in 1926 and it is but natural that I have followed his career with particular interest

and satisfaction. I am extremely happy that the University of Delaware has conferred its highest distinction upon so worthy a recipient.

In conclusion permit me again to repeat what a pleasure it has been for me to attend the functions in connection with this so happy occasion in the history of the University of Delaware.