

FORMAL OPENING OF THE NEW CHEMICAL LABORATORY UNIVERSITY OF CINCINNATI

The formal opening of the new chemical laboratory of the University of Cincinnati took place on Saturday, April 7, 1917. The exercises, presided over by Judge Rufus B. Smith, were held in McMicken Hall, Burnet Woods. The addresses were as follows:

"Presentation of the Building," Robert Hochstetter.
 "Reply on Behalf of the Department of Chemistry," Lauder W. Jones.
 "Reply on Behalf of the American Chemical Society," John Uri Lloyd.
 Address—"The Swing of the Pendulum in Chemistry," Charles H. Herty.

The chemical laboratory was open for inspection from 9 A.M. to 6 P.M. A brief description of the laboratory is found following the addresses.

A dinner in honor of the occasion was arranged by the Cincinnati Section of the American Chemical Society, and was served at the Hotel Gibson. Dr. Alfred Springer acted as toastmaster. Addresses were made as follows:

"Chemistry in a University," Charles W. Dabney.
 "The Relation of Chemical Industry to the University," Robert Hochstetter.
 "The Transmutation of the Chemist," Lauder W. Jones.

PRESENTATION OF THE BUILDING

By ROBERT HOCHSTETTER

In the absence of Mr. Pollak, the Chairman of the Building Committee, the Board has requested me to act in his behalf.

In 1912, by act of Council, the City was authorized to issue \$250,000 worth of Bonds, to be used in the construction of a Chemical Laboratory.

This building (which we are dedicating to-day) stands as a monument to the untiring efforts of Dr. Jones and his associates and their devotion and loyalty to Science, Education and this University.

We are proud of the fact that our University has been so fortunate as to have such an able teacher and chemist to guide the students who have the privilege to come under his influence.

May this building continue to serve the cause of Science and Industry, and may the students repay our city in service and loyalty for the generosity of our citizens which made it possible to house a chemical department which is now second to none!

Our thanks, therefore, go out to Dr. Jones with the hope that he will continue to serve our University for many years to come in as efficient a capacity as he has in the past.

It is, therefore, with much pleasure that I, in behalf of the University Trustees, turn over the keys of the new laboratory to you, Dr. Jones, and may the good work you have so nobly begun be carried on indefinitely!

REPLY ON BEHALF OF THE DEPARTMENT OF CHEMISTRY

By LAUDER W. JONES

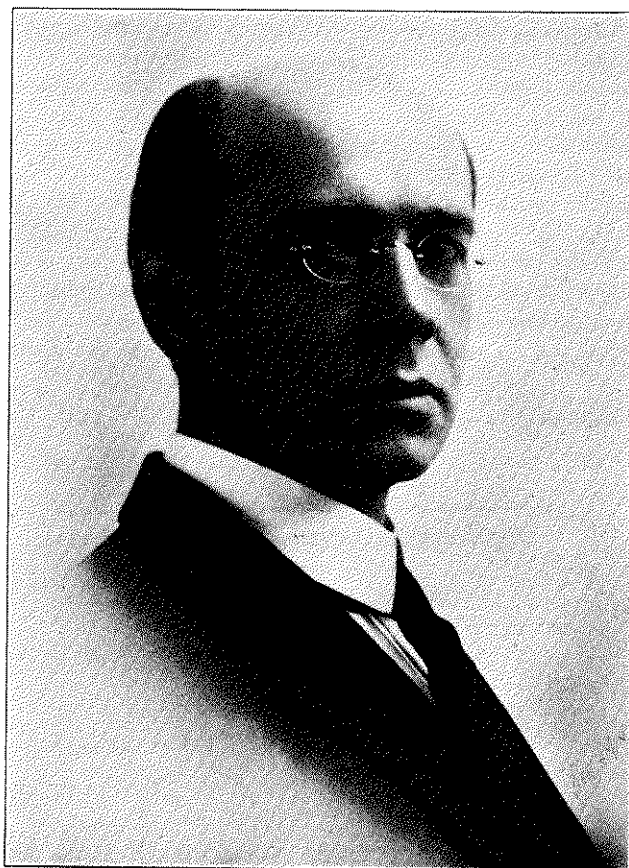
In reply to your very generous words, it is my privilege to speak not only for myself, but for the members of my staff, each and every one of whom has assisted in formulating and carrying into effect the plans of this new building. Permit me, therefore, to express to you our individual and composite appreciation of the trust which it is our honor to receive from you as representative of the Board of Directors of this University.

In accepting this laboratory for the services of chemistry and metallurgy, we are aware of the opportunities which you have granted us, and at the same time, of the responsibilities which you have imposed upon us. I assure you that it shall be our endeavor to use our opportunities wisely, and to assume our responsibilities willingly, and that, at all times, we shall strive to make this building, the home of the Department of Chemistry, a place

where the things accomplished shall be worthy of the University, and of the community which it is designed to serve.

Although every chemist has built laboratory-castles in the air, and has dreamed out plans for these ideal buildings, not many ever find themselves fortunate enough to see these dream textures fix themselves and become reality. Here, in Cincinnati, it has fallen to my lot to observe and guide a genuine transmutation of this very kind—to see a building develop from the idea of a building, through preliminary sketches, blue-prints, specifications, to the material stage as it stands now in brick, stone and mortar upon our campus. Not my laboratory-castle, perhaps, but better suited for the rough uses of daily life.

So, even though I must count my share in the bringing of these things to pass, a task, nevertheless it was a pleasant task, and one which I was not loath to undertake, since it had in-



DR. LAUDER W. JONES
Professor of Chemistry, University of Cincinnati

separably bound up with it something of the joy which an artist must experience in the creation of his work.

On this occasion, it may be interesting to relate briefly the important points in the historical development of the Department of Chemistry in this University. In 1873, the University Board decided to establish an Academic Department. By courtesy of the Board of High Schools, provisional arrangements were made under the management of Mr. G. W. Harper, Principal of Woodward High School, to offer courses of instruction in the High School. In October 1873, under the direction of teachers of Woodward High School, courses in ancient language, German, Mathematics, Chemistry and Physics were offered. Mr.

C. R. Stuntz was the first teacher of chemistry. His class numbered 13.

In 1874 regular courses of study were commenced with five recently appointed professors who offered the following subjects: Mathematics, Ancient Language, English, German, Physics and Chemistry. Dr. Frank Wigglesworth Clarke was chosen Professor of Physics and Chemistry. The Board of Education granted the University permission to use the 4th story of the Intermediate School located on Franklin St.

In October 1875, the first University building, on the McMicken grounds, near the Elm Street Incline, was completed. The Departments of Chemistry and Physics had quarters in the basement of this building. During this year there were in all 62 students enrolled in the academic department of the University.

In 1883, Dr. Clarke left the University to become associated with the U. S. Geological Survey in Washington, and Dr. Thomas H. Norton was appointed in his place.

McMicken Hall in Burnet Woods was completed and opened in September 1895, but the Departments of Chemistry and Physics could not be accommodated in the new building. The old University building on McMicken Ave. was rented by the University to the Board of Education for the use of the 6th District School, with the agreement that the Departments of Physics and Chemistry should occupy a portion of the building. However, in June 1895, a communication from Mr. Henry Hanna announced his intention of presenting to the University \$45,000 to be used for the erection of the "North wing of the New University Building." Work upon this building was commenced shortly afterwards, and in December 1896, the Departments of Chemistry and Physics were moved into Hanna Hall which they shared with the Department of Civil Engineering.

I have been told that many citizens wondered how the vast space in this building could ever be filled with students of chemistry. Professor Norton found himself supplied with room more than ample, but with equipment which was practically nil. An interesting item in the University budget for the year 1896 indicates how serious this need must have been. It reads: "For moving to Hanna Hall, \$9.30."

Hanna Hall was formally dedicated on May 13, 1897, just 20 years ago, lacking one month.

In 1900, Dr. Norton left the University to become United States Consul to Harput, Turkey. He was succeeded by Dr. Thomas Evans, who had been assistant Professor of Technical Chemistry in the department. During his term of office, the Engineering College, through the cooperative plan proposed by Dean Herman Schneider, started upon its successful career. Dr. Evans at the time of his death, in 1907, was Dean of the Engineering College.

In the fall of 1907, the Department of Chemistry was placed in my charge. At this time there were about 80 students enrolled in chemistry. But the rapid growth of the Engineering College, the affiliation with the Medical School and the organization of the pre-medical course, the introduction of courses in Domestic Arts, brought ever increasing numbers of students into the department, so that Hanna Hall, in spite of the fact that many rooms occupied by the Engineering Department were released and fitted up as laboratories, was no longer adequate to accommodate the students who presented themselves, and the erection of a more ample building for chemistry became a necessity.

In 1897, when Hanna Hall was occupied by the Department of Chemistry, there were 326 students in all academic departments of the University. In 1917, twenty years later, when the new building was occupied, 520 students enrolled for courses in chemistry and metallurgy, that is more than one and one-half times the total number of academic students 20 years ago.

"Chemistry concerns itself with the quantitative study of the changes in composition and constitution which material sub-

stances undergo, and with the transformations of energy which accompany them."

The science of chemistry, therefore, is an organized body of knowledge which comprehends within it all of the facts, laws, theories, and hypotheses relating to these changes and transformations, arranged and classified in accordance with the method which custom and convenience have found best suited to meet the needs of those engaged in the study and practice of the science.

Chemistry is called an abstract-concrete science. Since it has for its realm all material substances and the changes in energy which accompany their transformations, there is nothing of a material nature which may not constitute a legitimate problem for investigation by a chemist. If investigations of this kind are conducted without the expectation of making a direct or immediate application of the results to some phase of our daily life, or of industry, the problem is often spoken of as belonging to "pure science." If, however, there happens to be in the mind of the investigator the idea of discovering something of commercial value or of utility to industry, the problem is said to be one in "applied science." Unfortunately, in America in particular, the opinion has been quite prevalent that between these two ways of choosing and pursuing research there exists a chasm which is spanned by no bridges.

A little reflection, however, will convince any reasonable individual that no such antagonism can exist. Michael Faraday, one of the world's greatest men of science, once made the statement that "There is nothing so prolific of utilities as abstractions." If we believe in the uniformity of nature and that the science of chemistry is unified knowledge, it is impossible to conceive of two sets of *unrelated* facts and laws, one in the possession of the "pure chemist" and the other the peculiar property of the "applied chemist." Even the so-called secrets of applied chemistry must be *explainable* by the laws of the "pure chemist." As a matter of fact, in the historical development of the science, applied chemistry came first. The workers in bronze during the bronze age were familiar with metallurgical processes and knew some of the properties of the alloy bronze. In the iron age which followed, the users of iron were perfectly familiar with the property of iron to corrode or rust. Ancient peoples who prepared sugars, gums, starches and dyes, knew intimately the properties and practical uses of these materials. These very substances to-day form the basis of many important industries presided over by applied chemistry.

The relations which exist to-day in nature are the same in essence as they were during the time of the aborigines. All of our laws, theories and hypotheses were latent in the nature of things, waiting for the mind of man to formulate them. We can imagine that very early in the history of the human race there came to be individuals who, in a crude way, observed that certain facts, well known to all their clansmen as of practical value, but looked upon by them as unrelated, in fact, passed analogies, and were co-related or correlated. This stage represents the beginning of the science of chemistry.

Thus, we see that the two phases of the subject, the pure and the applied, were mutually interrelated and dependent upon one another at a very early time, and, in fact, through all ages, they have been inseparably intertwined. In 1845, when Hofmann discovered benzene in the loathsome by-product, coal tar, the fact was of interest, at first, to pure science alone. In 1865, Kekulé proposed the hexagon formula for this substance, benzene; this, too, was apparently the outgrowth of pure speculation and was of importance to those engaged in pure science. Out of these beginnings, contributions of the "pure chemist," the vast industries grouped under the name of coal-tar industries have developed.

After the death of Kekulé, in 1898, 33 years after he had pro-

posed the benzene formula, Japp delivered a memorial lecture in England in which he says:

"Kekulé's work stands preëminently as an example of the power of ideas. A formula, consisting of a few symbols jotted down on paper and joined together by lines, has supplied work and inspiration for scientific organic chemists during an entire generation, and has afforded guidance to the most complex industry that the world has ever seen."

If you will agree with me that my arguments are sound, then it must follow logically that the new laboratory, which has been entrusted to me and to my staff, to-day, can render greater service to the community and at the same time advance the science of chemistry best, if it is so organized as to deny, absolutely, that there exists between theory and practice even so much as a discernible cleavage plane. For the well-being of both they must be wedded—they must take one another for better or for worse.

The consequences of this point of view are almost self-evident. It will be our duty to see to it that elementary students who take courses in chemistry shall receive a most thorough training in the fundamental facts and laws of modern chemistry. As the students advance, their individual preferences will require different outlets for their activities, but, in any event, the department must see to it that each one shall develop along the lines which are best suited to make him an independent thinker and producer in the fields of chemistry.

So, for the advanced students, we should encourage in some the pursuit of research which may be as abstract as he pleases to make it, while in other cases it may be intimately associated with the noise and clangor of industry, believing, at all times, that both pathways lead ultimately to the same goal, the advancement of the noble science of chemistry, as well as the happiness, prosperity and well-being of mankind.

REPLY ON BEHALF OF THE AMERICAN CHEMICAL SOCIETY

By JOHN URI LLOYD

One of my friends said to me, "Now, Lloyd, Professor Herty is going to tell us about 'The Swing of the Pendulum,' which subject takes in all there is in chemistry, so you won't have anything to say about chemistry." Then Professor Jones is going to give us the history of the Chemical Society in Cincinnati, and it will be well for you not to take up much time talking about that." "What am I to talk about?" "Well," said he, "it is to be expected that an old man will talk about the early days, and give incidents that the younger people haven't had an opportunity to hear about, connecting times gone by with the present." So I shall take my text from the following thought, "Remember now thy Creator in the days of thy youth," and aim to put what I have to say within the fifteen minutes given me.

I speak as one who looks back, before there was any University of Cincinnati, before there was even a systematic "Art" of Chemistry in Cincinnati. I remember when the study of chemistry was started here, and believe I know the "Creator" of it all. As I cast my mind back into those days, 1863-4, come to mind those known then as the chemists of Cincinnati. They were Edward S. Wayne, Chemist of the Ohio College of Medicine, Daniel Vaughan of the Eclectic Medical College, and Professor Adolph Fennell, father of Professor C. T. P. Fennell. This was before the Cincinnati College of Pharmacy was established. Dr. J. F. Judge, Dr. W. B. Chapman, and others were co-laborers on the staff that followed. There were also the chemists of the public schools, one of whom you will remember as Professor Stuntz. In those days, the chemist was expected to be a druggist or a teacher in a school. Nothing was

there such as we now have in professional chemistry. And yet the principles that dominated pharmacy and chemistry fifty years ago gave birth to the broader vision of the chemist of the present.

Dr. W. B. Chapman, who established himself as apothecary at 6th and Vine, where the Weatherhead drug store now stands, was one of the *educated* pharmacists in Cincinnati. There were but a few of these, the pharmacists of those days having, as a rule, undergone a very heroic apprenticeship. I can in my mind's eye see Dr. Chapman now. Well did he serve the people of Cincinnati. And with such an ideal before me, I think next of Professor Adolph Fennell, father of our present Professor Fennell, of the College of Pharmacy to-day. Many here cannot but remember him, kindly as a child, a talented, educated, German pharmacist-chemist, a good citizen, a man who did much in the beginning as a creator of that which followed. Comes now to view Daniel Vaughan, that man of extensive learning, who came down the Pike from Lexington, Kentucky, walking to Cincinnati, as also did Rafinesque, the botanist-scientist. Vaughan did what he could in behalf of chemistry, and, at the last he quietly starved and died in a little upstairs corner room at Sixth and John Streets, thus paralleling, in death as in life, the life of Rafinesque, for Professor C. S. R. Rafinesque died a pauper in the rich city of Philadelphia, his body being dissected as that of a homeless vagrant. The room where Vaughan died stands yet at Sixth and John Streets. Vaughan, recognized the world over as a great scientist and mathematician, it is true, starved to death in Cincinnati, but this was his own fault, because he was too proud to beg, too rich in intellectuality to consider physical pain. These men, and such as they, gave to us the chance that comes to us of Cincinnati to-day. Had it not been for them, there could have been no University at the date it was founded, such as stands on this beautiful hillside to-day. Their inspiration gave us Hanna Hall, and the inspiration of which they were a part, gave us that which followed Hanna Hall. Where we stand to-day was then country, only. Burnet Woods had not even been made a part of the city. Indeed, as I recall events, it was long a question whether Cincinnati would receive it as a gift. Fortunately, it was accepted.

Whatever is, had a beginning, but few realize how slight is that beginning. Like the seed from which grew the great redwood tree of the West, was the beginning of this great building here. Its beginning is the very commencement of cosmopolitan art, of alchemistic chemistry, and of connected sciences, which are one and all lost in the shadows of antiquity.

After the days of Chapman and Fennell and Wayne and Judge and Vaughan, those pioneers of the olden time, came the founding of the society that I am honored in representing to-day. The old building in which this start was formulated stands to-day down the hillside, pathetically pleading its own cause. I remember the problems with which McMicken University on the hillside then had to contend. She had no professor of chemistry. The public schools of Cincinnati gave to her the first teacher of chemistry. Give credit to Professor Stuntz, of Hughes High School, whose lectures were given, not in a grand edifice like this, but in the very basement of that old building to a class numbering a possible dozen.

The first authorized Professor of Chemistry in the Cincinnati University, was F. W. Clarke. But partly understood by the men among whom he moved, a pure scientist, his ideals were in investigating lines, not then conceived to be connected with commercial activity. For this reason he did not appeal to most people, but some, like myself, felt like taking off our hats when we met him. Professor F. W. Clarke was working on what he knew to be the very foundation of chemistry, but yet this was seemingly outside the lines of bread and butter, as chemistry was then looked upon.