NECROLOGY

Will E. Edington, DePauw University

Kenneth Victor Bryan

Webster City, Iowa — Lafayette, Indiana
September 16, 1896 — February 14, 1958

One of the remarkable developments in America during the past forty years has been the almost complete mechanization of agricultural procedures. The horse has practically disappeared from the farm. The cow remains, but for the most part only in dairy herds. Modern sanitation requirements and the chemistry of foods have made dairy husbandry and dairy manufacturing a highly scientific study in our colleges. One of the leaders in this work has been Purdue University. Kenneth Victor Bryan, who came to Purdue in 1922, played a prominent part in this evolution in the dairy industry in Indiana through his work as a teacher and specialist in the fields of cheese, condensed milk, ice cream and the testing of dairy products. In his death on February 14, 1958, following a heart attack, Purdue and the State dairy industry suffered a distinct loss.

Kenneth Victor Bryan was born on a farm near Webster City, Iowa, on September 16, 1896. He attended grade school at Payne Center, Oklahoma, near Stillwater, and completed his elementary education at Stillwater. He entered the Oklahoma Agricultural and Mechanics College in Stillwater but was called into the Army early in 1917 and served two years in two infantry units and fought in four major battles of World War I. Following the end of the War he reentered the College and completed the course in dairy manufactures in 1921 and received the B.S. degree in Agriculture. He immediately entered the University of Wisconsin for graduate study, earned the M.S. degree in 1922, and came to Purdue in September of that year as an instructor in dairy husbandry. He was an Associate Professor of Dairy Husbandry at the time of his death.

Professor Bryan was a very conscientious and effective teacher and most of his work was the teaching of freshman dairy courses and courses in dairy manufactures. He kept abreast of the scientific developments in the dairy industry and contributed to the establishment of legal definitions for ice cream and other frozen dairy products. He made a special study in the "field of stabilizers including the use of lecithin, lecitho-protein and glyceryl mono-stearate in ice cream." During his many years at Purdue he contributed much to the good relations between the University and the dairy industry through his papers and talks before dairy industry associations and conferences held at Purdue and elsewhere.

He was an active member of the American Dairy Association and had been a member of the Indiana Academy of Science since 1924. He was a member of Sigma Nu social fraternity and a member and active counselor of Alpha Zeta, an agricultural honorary fraternity. He was long a member of the American Legion and the Masonic Lodge. He had served as treasurer of the Lafayette Lions Club and was active in its Youth Program. As a member of the First Methodist Church in West Lafayette he was particularly interested in its Men's Club work.

Professor Bryan was a quiet, friendly man deeply devoted to his family, and a dedicated teacher who contributed much to his students through his wise counsel and sincere interest in their success and welfare.

GEORGE HENRY ALEXANDER CLOWES

Ipswich, Suffolk, England — Woods Hole, Massachusetts
August 27, 1877 — August 25, 1958

The world owes much to those who have left their native lands and sought careers in America where the pioneering spirit still prevails and success and recognition, in general, depend on health, hard work and innate ability. A realization of this was strikingly brought to the attention of the Academy by the death of George Henry Alexander Clowes on August 25, 1958, from a stroke just two days before his eighty-first birthday.

George H. A. Clowes was born on August 27, 1877, in Ipswich, Suffolk, England. He was the son of a manufacturer of chemicals and early showed an aptitude for chemistry. He studied at the Royal College of Science in London, the University of Berlin, the Pasteur Institute in Paris, and the University of Gottingen where he received the Ph.D. degree in chemistry in 1899. He came to the United States the next year and joined the New York State Institute for the Study of Malignant Diseases, in Buffalo, where he began his study of cancer to which he devoted much of his thought and research for the rest of his life.

In 1918 he entered the research division of the Army Chemical Warfare Service in Washington. The following year he joined the research staff of Eli Lilly & Company as a biochemist. He was made Director of Research in 1920 and during the next twenty-five years he guided and developed the pharmaceutical research of that great organization so that at the time of his retirement in 1945 he directed a staff of 250 research scientists. As Director Emeritus he continued until his death his association with Lilly's as a consultant.

Dr. Clowes had a summer home at Woods Hole, Mass., and following his retirement he spent considerable time at the Marine Biological Laboratory where in seeking clues to the nature of cancer he conducted research on "marine bioligical system with particular attention to cell division and respiration and the nature and mode of function of living protoplasm." He had earlier studied the spontaneous recovery from cancer in animals and his research on reversible emulsions and surface films involved in cell metabolism early gained him wide recognition.

However, he was most widely known because of his early recognition of the value of insulin. On Christmas Day, 1921, he left home to go to New Haven, Conn., to hear the paper given by Dr. Frederick Banting, of Toronto, announcing the isolation and use of insulin in treating diabetic dogs. He recognized the tremendous value and possibilities of insulin and he offered to Dr. Banting the collaboration of the Lilly Research Laboratories which was accepted and led within the next year to the large-scale production of stable, pure, standardized insulin that has brought health and happiness to mankind in the control of diabetes and permitted millions to live almost normal lives.

Dr. Clowes was not only an outstanding scientist and excellent administrator but also a fine citizen and patron of the arts. He became a citizen of the United States in 1921 and henceforth actively participated in the civic betterment of Indianapolis. Deeply interested in art and music he actively supported and was a past president of the Indiana State Symphony Society. He possessed one of the finest private art collections in the United States which included five El Grecos, two Rembrandts, and works by Holbein, Constable, Franz Hals, Bellini, Ribera, Titian, Cranach, Rubens and others. He became a member of the Herron Art Institute in 1931, one of its directors two years later, and was a vice-president since 1937 and he frequently made art gifts to the Institute. He was also a member and past president of the Indianapolis Literary Club.

He and Mrs. Clowes frequently made visits to his native England. An ardent churchman he made numerous notes on church construction in England which led to the construction of Trinity Episcopal Church in Indianapolis following the design of a twelfth century English church.

Dr. Clowes was a founder member and a past president of the American Association for Cancer Research. He was also a member of the American Chemical Society, the Society for Experimental Biology and Medicine, the Biochemical Society, the Chemical Society of England, and Phi Lambda Upsilon chemical honorary society. He joined the American Association for the Advancement of Science in 1917 and became a Fellow in 1921. He had been a member of the Indiana Academy of Science since 1920 and was made a Fellow in 1934.

In 1932 Butler University conferred the Sc.D. degree on Dr. Clowes and Wabash College honored him with the LL.D. degree in 1938. The American Chemical Society honored him as a fifty-year member in 1955.

George Henry Alexander Clowes will be long remembered for his scientific and cultural contributions but his permanent monument will be his outstanding service to humanity and his fellow citizens.

AVALON CONWAY COX

Evansville, Indiana — Indianapolis, Indiana
September 16, 1897 — December 13, 1957

Crispus Attucks High School, in Indianapolis, was organized in 1927 and Avalon Conway Cox joined the staff as a science teacher. He had just received the A.M. degree from Indiana University which had also

conferred the A.B. degree on him in 1919. In 1930 he was made head of the Science Department and he continued his work at Crispus Attucks until his death from a stroke on December 13, 1957.

Avalon C. Cox was born in Evansville, Indiana, on September 16, 1897. His father was principal of one of the Evansville elementary schools and Mr. Cox received his public school education in that city. Before coming to Indianapolis he had taught for six years in the Bowling Green, Kentucky, and Princeton, Indiana, public schools.

Crispus Attucks High School was one of the six high schools whose science clubs constituted the Indiana Junior Academy of Science organized in 1931. Mr. Cox had joined the Indiana Academy in 1928 and he became active in the Junior Academy. At one time his school had four science clubs emphasizing biology, chemistry, zoology and radio, of which Mr. Cox sponsored the radio club, since his special interest was in physics.

He was an effective administrator who was respected and admired by both the students and faculty. Unassuming, courteous and friendly, his teaching problems were met with sympathetic understanding and patience. Following his death the Board of School Commissioners of the City of Indianapolis stated in a Resolution that "during his tenure both as teacher and head of the science department, Mr. Cox received consistently high praise for his devotion to public school education and for the contribution he made to good teaching in the Indianapolis Public Schools."

Mr. Cox was a member of both the National Education Association and the Indiana State Teachers Association. He was also especially active in Kappa Alpha Psi social fraternity and seldom missed attendance at its national conventions. He was also a veteran of World War I and had traveled extensively in the United States.

Avalon Cox was active in the Mt Zion Baptist Church in Indianapolis and also in community work. He was a skilled musician on both the pipe organ and the piano. As an excellent citizen and community leader and a friendly, cheerful man, he contributed much through his life's work to the betterment of human relations in Indianapolis.

SETH EARL ELLIOTT

Miller, South Dakota — Indianapolis, Indiana
July 19, 1891 — June 14, 1958

Seth Earl Elliott came to Butler University in 1924 as Head of the Department of Physics and he devoted the next thirty-two years of his life to teaching that fundamental subject at Butler. Following his retirement in 1956 he remained in Indianapolis until his death on June 14, 1958.

He was born in Miller, South Dakota, on July 19, 1891, but he grew up and received his elementary education in Akron, Iowa. In due time he entered Morningside College in Sioux City, Iowa, a short distance from Akron, and received the A.B. degree in 1912. The University of Iowa conferred the M.S. degree on him in 1915, following which he taught the next two years in the Denison, Iowa, High School.

During World War I he served as an instructor in the Field Artillery Officers' Training School. From 1920 to 1924 he was an instructor in mathematics and physics in the Hibbing, Minnesota, Junior College and he came from there to Butler University. He completed the work for the Ph.D. degree at Indiana University under Dr. Arthur L. Foley and received that degree in 1931. His thesis results were published in the *Proceedings* of the *Academy* for 1933. During World War II he was coordinator of the Air Force preflight training program at Butler and he received special government commendation for his work.

Dr. Elliott was active in the Indiana Schoolman's Club and the Indiana State Physics Teachers Association. He was a member of Phi Kappa Phi and Sigma Psi honorary fraternities and Lambda Chi Alpha social fraternity. He joined the Indiana Academy of Science in 1932 and was made a Fellow in 1952. He served in the Academy as chairman of the Physics Division in 1938 and was a member of the auditing committee from 1948 until his death. He was active in church work and had served as a deacon and an elder in University Park Christian Church in Indianapolis.

Seth Elliott was an excellent physicist and was interested in research but since he carried a heavy teaching load he concentrated on effective teaching and administration. He was well liked and respected by both his students and his colleagues, and he received national recognition through being listed for a number of years in Who's Who in America. A quiet, unassuming man, he endeared himself to those who really knew him, for he possessed that sincerity and courtesy that is seemingly becoming more rare. In his death Butler has lost one who served it well and the Academy has lost a most useful member.

HOWARD EDWIN ENDERS

Enders, Pennsylvania
June 18, 1877

Syracuse, New York
July 15, 1958

In every organization certain individuals stand out as leaders and for a number of years such a leader will help to shape the policies of the organization. Time gives perspective and as one reviews the history of the Indiana Academy of Science great leaders in its past have been such men as David Starr Jordan, Amos Butler, John L. Campbell, John

P. D. John, David W. Dennis, Stanley Coulter, Clarence A. Waldo, Mason B. Thomas, Arthur L. Foley, John S. Wright, Julius A. Nieuwland, Charles C. Deam, Ray C. Friesner. These men loved the Academy and their work helped to make the Academy great. Now another name must be added to this list: Howard Edwin Enders.

For thirty years Howard E. Enders was a leader in the Academy. He joined the Academy in 1906 and was made a Fellow in 1912, but his real leadership began in 1916 when he was elected Secretary of the Academy which position he held until he was chosen President five years later. From then on he served the Academy in many ways on various committees. It was through his leadership that the Junior Academy was organized in 1931 and he was its sponsor for the next fifteen years. In 1943 when wartime restrictions on use of gasoline prevented the meeting of the Junior Academy he reported that 43 high school clubs were affiliated and some of these clubs had from two to six science sections. The Academy became affiliated with the American Association for the Advancement of Science in 1925 and Dr. Enders was elected Representative of the Academy on the Council of the A.A.A.S. and he represented the Academy annually on the Council until 1946. He led the Academy committee that helped to bring the Annual Meeting of the A.A.A.S. to Indianapolis in 1937. Two years before his retirement in 1947 he began to work with members of the Academy chosen to succeed him.

Howard Edwin Enders was born in Enders, Pennsylvania, on June 18, 1877. After completing his public school education he enrolled in Lebanon Valley College where he received the B.S. degree in 1897, the M.S. degree in 1900 and served as Professor of Biological Sciences from 1900 to 1903. Lebanon Valley College conferred the Doctor of Science degree on him in 1946. Between 1897 and 1900 he taught in the Iron Mountain, Michigan, High School and spent the summers in graduate study at the University of Michigan and Harvard University. In 1903 he entered John Hopkins University where he received the Ph.D. degree in zoology in 1906.

Dr. Enders came to Purdue in 1906 as an instructor in zoology. Twenty years later, in 1926, he succeeded Dr. Stanley Coulter as Head of the Department of Biology. Following the death of Dean Richard B. Moore in 1931 he was made acting Dean of the School of Science and in February, 1932, he was appointed Dean.

During his forty years of active service at Purdue, Dean Enders carried on research in various places off the campus. He spent five summers at Johns Hopkins University and five summers at the Indiana University Biological Station at Winona Lake. The summer of 1925 found him doing research in parasitology at the Kartabo Jungle Laboratory of Tropical Biology in British Guina. He worked during the summer of 1927 in the research laboratory of the Institute of Tropical Biology, Gatun Lake, Panama Canal Zone, and in the summer of 1933 he took a group of Purdue students with him to do tropical research in the Lancetilla Experiment Station in Honduras.

Dean Enders was author of research articles in professional journals. He presented eleven papers before the Academy of Science and also three joint papers, of which seven were published in the *Proceedings* of the *Academy*. He was also the author of "Laboratory Directions in General Biology" in 1912, the fourth edition of which appeared in 1936.

Dr. Enders joined the American Association for the Advancement of Science in 1901 and was made a Fellow in 1911. As Academy Representative he was secretary of the Association of State Academies affiliated with the A.A.A.S. for one year and was the chairman for two years. He was a member of the American Society of Zoologists and the Johns Hopkins chapter of Phi Beta Kappa. He was also president of the Purdue chapter of Sigma Xi for one year. He was active in Rotary and was president of the Lafayette Rotary Club in 1931. He spent his retirement years in Venice, Florida, where he continued his activity in Rotary by serving as secretary of the Venice-Nokomis Club for five years until his health failed and then the Club made him an Honorary Member for the rest of his life.

Dr. Enders was an interesting and effective teacher, lecturer and administrator. As a teacher he developed the course in General Biology at Purdue to the point where he had an enrollment at one time of over 500 students. He was thoughtful, calm and deliberate in his work such as to inspire confidence. For a number of years he lectured on physiology at St. Elizabeth Hospital in Lafayette. He possessed a genial personality and a charming sense of humor and he was a most gracious host. As an administrator he was fair and farseeing.

When his health failed he went to live with a daughter in Syracuse, New York, where he passed away on July 15, 1958. He had lived a most full and fruitful life and his unselfish service to both Purdue University and the Indiana Academy of Science will be long remembered.

KARL LARK-HOROVITZ

Vienna, Austria — Lafayette, Indiana
July 20, 1892 — April 14, 1958

With the coming of Dr. Edward C. Elliott to Purdue in 1922 as President, the University soon began to emphasize graduate study. The Graduate Committee was reorganized in 1924, the Graduate Council headed by a Dean followed a few years later and the first Ph.D. degree under the new setup was conferred in 1928. The only Ph.D. degree ever given by Purdue previous to 1928 was conferred in 1897 on Daniel T. MacDougal working under Dr. Joseph C. Arthur. This emphasis on graduate study and research resulted in the appointment of outstanding scientists to the Purdue staff. One of the first of these scientists to come to Purdue was Karl Lark-Horovitz as a Professor of Physics in 1928. He became Director of the Physical Laboratory in 1929 and succeeded Professor E. S. Ferry as Head of the Department in 1932.

Karl Lark-Horovitz was born in Vienna, Austria, on July 20, 1892. He received all his formal education in Vienna but his graduate study in the University of Vienna was interrupted by four years of service

as an officer in the Austrian Army in World War I and the Ph.D. was not conferred on him until 1919. He immediately became an instructor in physics in the University of Vienna and remained six years. In 1925 he was awarded an International Research Council Fellowship which brought him to the University of Toronto, in Canada, for a year and then a second year at the University of Chicago and the Rockefeller Institute of Research, followed by a third year at Stanford University. In the spring of 1928 he was invited to give several lectures at Purdue and his appointment at Purdue followed.

Dr. Lark-Horovitz was an excellent theoretical scientist with a keen analytical mind, deep insight, and a fertile imagination. Once in charge he soon changed the Physics Department from being largely a service department to other Schools in the University and surrounded himself with a carefully chosen staff of talented physicists, graduate assistants and graduate students. Well trained in chemistry, mathematics and philosophy as well as in physics he possessed an unusually broad perspective of the physical sciences and he was able to communicate his ideas and enthusiasm to his students which led to a steady flow of trained physicists with master's and doctor's degrees from Purdue. His success was followed by additional financial support from the University, Foundations, industrial interests and the Federal Government. By 1936 the Department began to acquire elaborate equipment and a cyclotron was built through the purchase of parts and the construction work of enthusiastic graduate students. The rapid development and expansion of the Department with its broad program of modern research necessitated the erection of a fine physics building in 1941 suitable to the demands of the time.

Publication of his research results began even before he received the doctorate and included results of studies on radioactivity, relativity, electromotive force of dielectrics and visual space perceptions of the human eye. He had considerable power in mathematical physics. His later research "ranged from the physics of the solid state to biophysics, from X-rays to nuclear investigations, and from the physical investigation of the qualities of good violins to the practical considerations in the production of glass." He directed in the Department major programs of solid state physics, nuclear physics, cosmic ray physics, low temperature physics and biophysics so that Purdue has become one of the outstanding physics research institutions in the country.

Dr. Lark-Horovitz by no means neglected the undergraduate program in physics. He modernized the general physics courses by integrating into these courses fundamental ideas from chemistry, biology and even philosophy. As a member of a University Committee on the Education of Women he was instrumental in initiating the Experimental Liberal Science curriculum at Purdue for enriching the course work in the School of Science, Education, and Humanities. He was deeply concerned about the effective teaching of science and mathematics and proceeded to do something about it. He had joined the American Association for the Advancement of Science as a Fellow in 1934 and was soon appointed a member of the A.A.A.S. Cooperative Committee on the

Teaching of Science and Mathematics and was its Chairman from 1945 to 1950. His interests led to the study of the teaching of science through all levels from the kindergarten to the graduate school and resulted in reports such as "The Preparation of High School Science Teachers" and "Manpower in Research." This latter Report was made to the President of the United States by the President's Scientific Research Board. Dr. Lark-Horovitz's work led to the strengthening of the requirements for the certification of science teachers in Indiana and elsewhere. Because of his contributions to the teaching of physics he received a Distinguished Service Citation from the American Association of Physics Teachers.

One of his outstanding achievements that brought distinction to the department was his direction in 1942 of a wartime defense project for the government in the development of crystal rectifiers. Through his knowledge of chemistry he chose germanium as the material for investigation and he and his colleagues succeeded in purifying the material and analyzing its behavior. These findings served as a foundation in the development of the transistor by others using the results.

The Indiana Academy of Science first became acquainted with Dr. Lark-Horovitz when he gave an invited lecture "What is Static Electricity?" at a General Meeting of the Academy in 1930. He joined the Academy in 1933 and was made a Fellow in 1936. He wisely used the Academy meetings as a training ground for young physicists through the presentation of twenty-one joint papers before the Physics Division of the Academy. As many as five of these joint papers were given at a single meeting of the Academy in 1934, and the last joint paper was presented in 1957.

Dr. Lark-Horovitz was a Fellow of the American Physical Society and a member of the American Association of Physics Teachers, the Society for the Promotion of Engineering Education, the American Association of University Professors, Sigma Xi and Sigma Pi Sigma physics honorary society. In the American Association for the Advancement of Science he was General Secretary from 1947 to 1949 and a member of the Editorial Board from 1949 to the time of his death, which occurred suddenly from a heart attack on April 14, 1958.

Karl Lark-Horovitz was a truly great man and an outstanding research scientist with an international reputation. He will long be remembered through his published work. The United States profited greatly through the coming of this scientist to America in 1925 and his acceptance of citizenship in 1936. He brought greatness to Purdue, to the Academy and to the State of Indiana.

EDWARD HULBERT NILES

Oriskany, New York — Indianapolis, Indiana
August 14, 1882 — September 23, 1958

It is somewhat unusual to find a man who was a dean of the school of pharmacy and a university lecturer in materia medica and pharmacy and who was also a licensed chemical engineer. But such a man was Edward Hulbert Niles who at the time of his death on September 23,

1958, was Emeritus Dean of the Butler University School of Pharmacy and for years had lectured to classes in the Indiana University School of Medicine and was licensed as a chemical engineer by the State of Indiana.

Edward H. Niles was born in Oriskany, New York, on August 24, 1882. After completing his public school education he became interested in chemistry but he pursued no course to a degree until he came to Indianapolis in 1911 to enter the Indianapolis College of Pharmacy where he received the degree of Pharmaceutical Chemist in 1912 and the Doctor of Pharmacy degree in 1914. The following year he became an instructor in pharmacy in the Indianapolis College of Pharmacy, was promoted to Professor of Pharmacy in 1917 and became Dean of the College in 1921. When the College became affiliated with Butler University in 1945 he continued as Dean until his retirement in 1952. During these years he worked out the requirements for a B.S. degree in 1929 in the College of Pharmacy and the A.B. degree in 1936 at Butler. He had also done graduate study at the University of Chicago in 1923 and at Indiana University in 1937-1938. His broad knowledge of chemistry enabled him to secure the license as a chemical engineer. He lectured on pharmacy in the Indiana Veterinarian College from 1920 to 1923 and he lectured in the Indiana University Medical School from 1945 until the time of his retirement.

During World War II Dr. Niles was chairman of the War Manpower and Veterans Commission of the Indiana Pharmaceutical Association and he was also on its education committee. For many years he helped in the revision of the United States Pharmacopea, the standard, authoritative work on formulas for compounding drugs. He was a consultant member of the American Pharmaceutical Association and served a year as chairman of the Indiana Section of the American Chemical Society. At the dedication in 1952 of the million dollar building for Butler's College of Pharmacy Dr. Niles was lauded as "one of the nation's leaders in pharmacy."

He was a member of the American Pharmaceutical Association, the American Chemical Society, the Indiana Interprofessional Health Council, Phi Kappa Phi scholarship honorary and Kappa Psi pharmacy society. He had been a member of the Indiana Academy of Science since 1920. He authored a number of articles in professional journals but he had published no papers in the *Proceedings* of the *Academy*.

Dr. Niles was a member of the Episcopal Church and was very active in Masonry in Indianapolis as a member of Mystic Tie Masonic Lodge, Murat Shrine, Knights Templar and the Keystone Chapter of Royal Arch Masons.

Following his retirement he devoted his time to reading, attending musicals, playing chess, some of the games by correspondence, and helping students who frequently called on him. Through the years he had endeared himself to many students who kept in touch with him. Following his death on September 23, 1958, Dr. Rolla N. Harger, one of his best friends and a former colleague of his in the Indiana University Medical School, and on a mission in Pakistan, wrote from

Karachi: "Many generations of physicians and pharmacists will always be grateful for his instruction." He and Dr. Harger had worked together in trying to get proper poison legislation enacted for Indiana.

Dr. Niles lived a long, useful life of service to education and pharmaceutical science in Indiana.

HERMAN RUDOLPH REICHENBACH

Hamburg, Germany — Anderson, Indiana
July 6, 1898 — April 20, 1958

To the physicist, light and sound are wave phenomena. To the painter light is a study in color effects and to the musician sound is a study in tone effects. These effects produce psychological reactions which we consider to be mental phenomena. Does it follow that art and music are just as scientific as physics and psychology? Herman Rudolf Reichenbach believed that they were and he spent much of his life trying to show this relation between music and science. His ideas were based on a sound knowledge of music, physics and mathematics, for he had studied musicology and physics in the University of Berlin, physics and mathematics in the Technische Hochschule in Stuttgart, and he had earned the Ph.D. degree in music, physics and mathematics at the University of Freiburg. He was a composer of music and he was a skilled musician on the piano, clarinet, saxophone and cello. He was pioneering in a field that involves the integration of knowledge, a field that is fundamentally important in both science and the humanities.

Dr. Reichenbach was born in Hamburg, Germany on July 6, 1898. He completed the educational requirements for admission to a university before being called into the German Army in 1917 as a radio engineer in the Air Force in World War I. He entered the University of Berlin in 1918, the Technische Hochschule in Stuttgart in 1920, and received the doctorate from the University of Freiburg in 1923. From 1925 to 1927 he did acoustical work in the University Institute in Berlin with Professor V. Hornbostel. For the next six years he was Docent at the State Academy for School and Church Music and Director of the Folk Music School, both in Berlin, and during the last three years he was also Secretary at the Central Institute for Education and Teaching, also in Berlin. In 1934 he became a demonstration lecturer for a radio manufacturing corporation for which he traveled in the various countries of Europe for the next three years. In these travels he collected folk music of the various countries for later publication.

Both he and his brother Hans Reichenbach, an outstanding philosopher of science, came to the United States in 1938. Herman accepted an assistant professorship in musicology in Mary Washington College of the University of Virginia. In 1948 he became Professor and Chairman of the Department of Mathematics and Physics at Wilson College in Chambersburg, Pennsylvania. He accepted a similar position four years later in Sterling, Kansas, College, and, in 1954, he came to Anderson College as Professor of Physics. He was stricken with a heart attack which ended his life two weeks later on April 20, 1958.

Dr. Reichenbach had published a number of articles in Germany on music theory and its history. He had also composed music, mostly in the field of chamber music. His later interests were mainly in the relationship between art and science and the mathematical analysis of musical works. He conducted seminars in which he attempted to show through musical works the relation of art and science. In the Fall of 1956 he gave a series of lectures at the University of Melbourne, Florida, and he also gave an address before the Kansas Academy of Science. He had been a member of the Indiana Academy of Science only a short time and was not known to many members of the Academy. However, he gave a paper on "Arts and Sciences" before the Physics Division of the Academy in 1957 which was very favorably received.

Dr. Reichenbach possessed an unusual mind. He was an expert at chess and had, as a boy, played blind against champions. Besides English and his native German he spoke and read French, Italian and Russian, and he also read Latin. While he was a student in Berlin he became acquainted with and was profoundly impressed by Albert Einstein. His brother Hans at that time, was working with Einstein in Berlin and in 1938 he came to the University of California at Los Angeles as Professor of Philosophy. Both brothers received international recognition for work is their respective fields.

In the death of this talented and scholarly man the Academy and Anderson College, in particular, have suffered a genuine loss.

KENNETH POWERS WILLIAMS

Urbana, Ohio
August 25, 1887

Bloomington, Indiana
September 25, 1958

During the past ten years, Kenneth Powers Williams became widely known nationally and was the recipient of a number of honors because of his excellent work as an author of an extensive and exhaustive study of the Civil War between the States. This work entitled "Lincoln Finds a General" was begun in 1944 and was not originally intended to be more than a magazine article, but as his studies of the official records of the war containing the reports of the various generals increased, he determined to write a comprehensive and authoritative work. The first two volumes of what was intended to be a seven volume work appeared in 1949, the third volume in 1952 and the fourth volume in 1956. He had virtually completed the fifth volume, written under great suffering from cancer, when his death occurred on September 25, 1958. The excellence of his work was such that the Saturday Review ranked him along with Douglas Southall Freeman and Bruce Catton "as one of the great triumvirate of Civil War Historians."

This work began as an avocation by Professor Williams and grew out of the fact that he had been active since World War I in military work along with his mathematical and astronomical studies. He enlisted as a private in the First Infantry, Indiana National Guard, in April, 1915, and was commissioned a First Lieutenant of Infantry in 1916

and served on the Mexican border from July to October of that year. He transferred to the 150th Field Artillery during World War I and served overseas as a Captain from October, 1917, to July, 1919, during which time he commanded a Battery of the 42nd Division. After his return to America he served in the Officers Reserve Corps, and in 1921 was appointed a Major in the First Field Artillery of the Indiana National Guard and was promoted to Lieutenant Colonel in 1924. He became Chief of Staff of the 38th Division in 1931 with the rank of Colonel. In December, 1940, he took over the command of the 113th Battalion, Quartermaster's Regiment, and a month later was inducted into World War II service as both Commander of the 113th Battalion and Quartermaster of the 38th Division. He retired from active army service on November 11, 1941. With this background he was indeed competent to write "Lincoln Finds a General."

However, Kenneth P. Williams was much better known to scientists as a mathematician and author of several books and many research articles in mathematics and astronomy. He was an excellent mathematician but naturally, due to the nature of the subject, no research results could be spectacular or have a cosmopolitan appeal.

Kenneth P. Williams was born on August 25, 1887, in Urbana, Ohio, and he received his public school education there. His father was Professor of Mathematics in Urbana College. In 1905 Kenneth entered Clark College, Worcester, Massachusetts, but transferred to Indiana University in the Fall of 1906. He received the A.B. degree in 1908 and the A.M. degree in 1909 and was immediately appointed an instructor in mathematics. From then on his professional life was devoted to service for Indiana University except for the period required for graduate study to obtain the Ph.D. degree from Princeton University in 1913. He advanced rapidly in the Department to Assistant Professor in 1914, Associate Professor in 1919 and Professor in 1924, and he was Chairman of the Department from 1937 to 1944. In 1957 Indiana University conferred on him its highest academic award of Distinguished Service Professor. He retired on July 1, 1958, as Indiana University's senior faculty member with 39 years of service.

Professor Williams did a considerable amount of excellent mathematical and astronomical research which was published in the leading mathematics and astronomy research journals in America. He was also the author of five books: Dynamics of the Airplane, 1921; College Algebra, 1928; The Calculation of the Orbits of Asteroids and Comets, 1934; The Mathematical Theory of Finance, 1935; The Transits of Mercury, 1939.

He joined the American Association for the Advancement of Science in 1924 and was made a Fellow in 1925. He was active in the work of the American Mathematical Society. In the Mathematical Association of America, of which he was a Charter Member, he served as chairman of its Commission on the Place of Mathematics in Secondary Education from 1934 to 1940 and he was a member of its Board of Governors from 1945 to 1947. He also served as chairman of its Indiana Section in 1933. He was a member of the American Astronomical Society, Societe Astronomique de France, Phi Beta Kappa, Sigma Xi and Scab-

bard and Blade. He was also a member of the American Legion and the Masonic Lodge. In the American Association of University Professors he served from 1931 to 1935 as chairman of its Committee on Required Courses in Education. He first joined the Indiana Academy of Science in 1910 but his membership was interrupted by war service and he became a member the second time in 1945 and was made a Fellow in 1953. Early in his career he presented papers before the Academy.

In his later years Professor Williams received many honors and awards due largely to his literary work. Among these were the Gold Medal of the Society of Libraries of New York University, the Diploma of Honor of Lincoln Memorial University, the medal of the Lincoln Civil War Society of Philadelphia, and the first Indiana Author's Award by the Indiana University Writer's Conference. Just a week before his death he was awarded the Distinguished Service Medal of the Indiana National Guard by direction of Governor Handley for "exceptionally meritorious and distinguished service for the period 1916 to 1941." He was also nominated for the Pulitzer Prize.

As a teacher Professor Williams was noted for his work with graduate students for he demanded rigor and had little use for triflers. However, he was fair and considerate and was popular with the student body. He received the Leather Medal presented by the student group Sigma Delta Chi for outstanding service to Indiana University. With the coming of Robert D. Carmichael to Indiana University in 1911 more emphasis was put on graduate study in mathematics and the first Ph.D. degree ever given in mathematics at Indiana University was received in 1912 by Cora B. Hennel who was a member of the mathematics teaching staff. Professor Williams was deeply interested in the better preparation for teachers of mathematics and he joined Professor Carmichael in the development of graduate study as a means of securing well prepared teachers. Professor Carmichael left Indiana University in 1915 but Harold T. Davis came in 1923 and during the next fourteen years he and Professor Williams trained a number of Ph.D. candidates in mathematics.

Kenneth P. Williams will be long remembered in Indiana for his mathematics teaching and research as well as being the author of "Lincoln Finds a General." He was a most loyal citizen who served his state and his country well. He had little sympathy with shallow thinking and he lived a life of uncompromising integrity. In the words of President Wells, of Indiana University, he "was a man of great heart, great intellect, and great spirit."