

NECROLOGY

WILL E. EDINGTON, DePauw University

ALVA BRADEN BEECHER

Crawfordsville, Indiana
November 30, 1890

Bradenton, Florida
February 1, 1964

Long before Crawfordsville, Indiana, became noted for its literary men, it was famous in scientific circles at least for its crinoid beds located a mile north of the city on Corey's Bluff along the north bank of Sugar Creek. The Crawfordsville crinoid area is second in North America only to the beds located near Burlington, Iowa, and was well known a century ago. By the end of the nineteenth century most of the stone lily beds on Corey's Bluff had been quarried on a commercial basis, but there are still occasional fine fossil specimens to be found and the area still has considerable geological interest. It always gave Alva Braden Beecher, a most personable and accommodating man, great pleasure to conduct small groups and an occasional visiting geologist on tours over the area with which he was well acquainted. He also had considerable interest in all the life sciences and was an active member of the DePauw-Wabash Sigma Xi Club and regularly attended its dinner meetings. He was interested in science as an avocation for professionally he had spent most of his life in newspaper work.

Alva Braden Beecher was born in Crawfordsville, Indiana, on November 30, 1890, and graduated from its High School in 1911. Most of his life was spent in Crawfordsville, but during the World War I period he was employed by the street railways in Indianapolis and the death of his wife occurred during this period. He graduated from Wabash College in 1924 but he had previously attended Butler University and later the Indiana University Medical School where he remarried in 1921. While attending Wabash College he accepted employment in 1923 with the old Crawfordsville Journal, which later became the Journal-Review, where he became manager of the advertising department from which he retired on January 1, 1957. Following his retirement he and Mrs. Beecher spent most of each year in Florida, but he returned to Crawfordsville each summer and substituted for members of the advertising department during their vacations. He died suddenly of a heart attack on February 1, 1964, in Bradenton, Florida.

Mr. Beecher was a very civic minded business man, being an active member of the Montgomery County Chamber of Commerce for over twenty-five years. He served as a precinct committeeman for over forty years and represented the Crawfordsville Second Ward in the City Council from 1948 to 1958. Early in life he became a member of the Lions Club and later an active member of the Kiwanis Club

until his retirement. He possessed a pleasing personality and was always delighted to meet and work with others.

Long an active Mason, he was deeply interested in DeMolay and participated in the work of the Eastern Star of which Mrs. Beecher had served as Worthy Matron. Masonic graveside services were conducted for him in the Crawfordsville Oak Hill Cemetery. He was also a member and deacon of the Crawfordsville Wabash Avenue Presbyterian Church.

Over the years Mr. Beecher was interested in biology as well as geology. He joined the Indiana Academy of Science in 1949 and was well known to Wabash College and DePauw University Sigma Xi members. In his retirement he spent much of his time with his boat and camera studying water and shore birds. Alva Braden Beecher possessed the spirit and enthusiasm of a naturalist.

GLENN ALBERT BLACK

Indianapolis, Indiana
August 18, 1900

Evansville, Indiana
September 2, 1964

"Books have been written to propound, in terms of the philosophy of history, the aims and objects of archaeological research. But every archaeologist knows in his heart why he digs. He digs in pity and humility that the dead may live again, that something may be salvaged from the wreck of the ages, that the past may color the present and give heart to the future. His excavations are the only payment that we can make against the debt we owe to those who, through the millenia, fashioned the world in which we live."

Glenn Albert Black used this quotation from Geoffrey Bibby's volume, "The Testimony of the Spade," in his comprehensive review of archaeological work in Indiana which appeared in the April, 1961, number of the Indiana History Bulletin. No one could have written on Indiana archaeology with greater authority than Glenn Black, for he had spent over thirty years as archaeologist for the Indiana Historical Society. His scholarly article traces archaeological work done in Indiana beginning with Charles Alexander Leseuer, one of the scientists at New Harmony, down through the State Geologists, Cox, Collett, Gorby, and such naturarists as Moses N. Elrod, Rufus Haymond and Gerard Fowke, to the present. Glenn Black knew more about the prehistory of Indiana than any other living man.

Glenn Black was born in Indianapolis on August 18, 1900. Following his graduation from Indianapolis Technical High School it took some time for him to find his life's work. He served as an estimating engineer for the Fairbanks-Morse Company in Indianapolis several years before taking up archaeology as a profession. He had attended Ohio State University and had studied under Henry C. Shetrone, Archaeologist for the State Museum of Ohio, in Columbus, who lectured at Ohio State University in 1928-1929, and who influenced Black to dig for the secrets of the past.

In 1928 the Indiana Historical Society began a systematic archaeological survey of the 92 counties of the State. Black was appointed

the Historical Society Archaeologist in 1931 and made his first report of a visit in April, 1931, to the site of the so-called Fort Azatlan on the Wabash near Merom, in Sullivan County, and of visits to several other sites along the Ohio River in Eastern Indiana. In May, 1931, a visit to the Angel Mounds Site was made by Warren King Moorehead, nationally known Ohio archaeologist, Eli Lilly, E. Y. Guernsey and Glenn Black, but it was not until 1938 that the Indiana Historical Society, through private subscription, purchased the Angel Mounds Site of 450 acres. In the meantime Black worked in Greene County in the summer of 1931, Dearborn, Ohio and Owen Counties in 1932 and 1933, Blackford County in 1934, and excavated the Nowlin Mound in Dearborn County in 1935. He described his work in Greene County in a 163-page report, "The Archaeology of Greene County," in Vol. 10, 1933, of the Indiana History Bulletin, and the "Excavation of Nowlin Mound" findings, a 132-page article in Vol. 13, 1936. Briefer reports on other investigations appeared regularly in the Indiana History Bulletin. When not in the field he gave numerous talks over the State before county historical societies, service clubs, research clubs, schools and school organizations, and over the radio. For example, during the year 1933-1934 he gave 26 talks not including two radio broadcasts over Station WLW. Lecturing became a definite part of his work through the rest of his career. By 1942 he was illustrating his lectures with lantern slides in color before audiences of 150 to 600.

Following the purchase in 1938 of the Angel Mounds Site by the Indiana Historical Society Black took charge of the archaeological work. In August, 1938, the Works Progress Administration considered a project sponsored by the Historical Society which was approved that fall and which permitted the "employment of needy persons on archaeological research in Indiana," the WPA to provide 88.69% of the required monetary allotment. Work was begun on clearing the site in April, 1939. The excavation of the mound began in June, 1940, with over 200 WPA laborers at work during the Spring of 1940. However, the WPA stopped the work in the Spring of 1942, owing to improved labor employment conditions in Evansville, although the mound excavation was not completed, and for a time no work was done on the site.

In 1944 Indiana University added Archaeology to its campus curriculum with Glenn Black employed in the Department of Zoology as a Lecturer in Archaeology. In 1945 the University and the Historical Society cooperated in establishing a Field School at Angel Site with Black in charge. By 1948 a kitchen and mess hall and two dormitories had been provided at the Site and eleven students spent the Summer in field work. Black was Director of the Field School until the time of his death. For the Summer of 1963 he was Lecturer in Anthropology for Indiana University and gave a course, "Field Work in Archaeology and Physical Anthropology," and directed the work at Angel Mounds. In order to be near his work he made his home for a number of years at Newburgh, Indiana, a few miles east of Evansville.

The Historical Society gave the Angel Site to the State in 1947, under the general supervision of the Department of Conservation,

cooperating with Indiana University. Also the Department of Anthropology was formed in 1947 by the University with Dr. Charles F. Voegelin as Chairman and Black became and remained a Lecturer in the new Department until 1960.

Through the interest and efforts of Eli Lilly the Archaeological Division, later the Anthropology Division, of the Indiana Academy of Science was organized in 1935 with Mr. Lilly as Chairman. Mr. Black, who had joined the Academy in 1933 and became a Fellow in 1937, succeeded Mr. Lilly as Chairman of the Division for the next three years. He presented 18 papers before the Academy, one a joint paper with Paul Weer, a number of which were published in the Proceedings. He served the Academy on several committees such as the Library, Program, and Archaeological Survey Committees, and in 1936 on the committee to assist Dr. Henry B. Ward, Permanent Secretary of the American Association for the Advancement of Science, in making arrangements for the meeting of the A.A.A.S. in Indianapolis in 1937. At the General Meeting of the Academy in 1962, in Evansville, following the completion of the Divisional Programs he held Open House at Angel Mounds and conducted a tour of the Site.

Dr. Black was a Fellow of the American Anthropology Association and served the Society of Archaeologists as Vice President in 1938, President in 1941 and Treasurer from 1947 to 1951. He was also a member of the National Research Council from 1958 to 1960. A co-founder and active member of the Lapidary Society of Evansville, he was a skilled gem cutter which he enjoyed as a hobby. He was an elder in the First Christian Church of Evansville, and held the following Masonic orders: Blue Lodge, Scottish Rite, York Rite, Lavalette Commandery, and Eastern Star.

In 1954 he was joint author with Eli Lilly, George K. Neumann, Joe E. Pierce, C. F. Voegelin, Erminie W. Voegelin and Paul Weer in the book "Walam Olum or Red Score: The Migration Legend of the Lenni Lenape or Delaware Indians." He also wrote in 1958 an illustrated 14-page booklet "'A' is for Axe—A First Reader" about some Indiana Artifacts, that was published by the Indiana Historical Society and offered free to teachers and students interested in Indian History.

All of Glenn Black's scientific work was done in Indiana but he had a national reputation as an archaeologist. His career was interesting for he was largely a self-trained archaeologist who had never completed a college course to receive a Bachelor's degree. However, his standing as a scientist was recognized by Wabash College which conferred on him in 1951 the Sc.D. degree with the following citation: "Glenn Albert Black, you have won the admiration and confidence of our historically minded citizens by your devotion to and attainment in American archaeology. Through ability in leadership, masterly technique and conscientious hard work in conducting excavations and summer training camps and by public lecturing you have won high recognition among American archaeologists and made vital contribution to the knowledge of the prehistory of Indiana."

Dr. Glenn Black died in the Deaconess Hospital in Evansville, Indiana, on September 2, 1964. Following services in Evansville, final services were held in Crown Hill Cemetery in Indianapolis.

JAMES EPHRAIM BROCK

Marion, Indiana
November 22, 1891

Lafayette, Indiana
October 1, 1964

On December 7, 1928, the Indiana Academy of Science held its General Meeting at Indiana University. James Ephraim Brock, then an Assistant Professor of Physics at Purdue, drove his car to attend the Meeting and I accompanied him, for both of us were presenting papers before the Division of Mathematics and Physics. It was an interesting meeting for Professor Brock because six months previously he had received his Ph.D. in Physics at Indiana University and he would be able to meet Professors Foley, Ramsey, Dutcher and Hufford, all of whom like Brock had received their A.B. and A.M. degrees, and the latter two also their Ph.D. degrees, at Indiana University. Dr. Brock had received the A.B. in mathematics in 1919 and the A.M. in physics in 1923 at Indiana University. He had previously received the B.S. degree in 1913 from the Marion, Indiana, Normal College.

James E. Brock was born near Marion, Indiana, on November 22, 1891. He met the teacher requirements imposed by the State in the first decade of this century and began his teaching career in 1910 in the public schools. He continued public school teaching until 1923, taking some time out to attend Marion Normal College and Indiana University. He began his college teaching as an instructor in physics at Indiana University in 1923-1924. In 1925 he accepted an assistant professorship in physics in the Texas Agriculture and Mechanics College. In the following year he became Assistant Professor of Physics at Purdue. He left Purdue in 1930 to become an engineer with the Hazeltine Corporation in New York. He returned to teaching in 1932 as Professor of Physics and Mathematics in Brenau College in Gainesville, Georgia. Two years later he accepted the chairmanship of the Department of Physical Sciences in Nebraska State College, Wayne, Nebraska. In 1941 he became Professor and Head of the Department of Physics in Arkansas State College, located in Jonesboro and Beebe, Arkansas. He entered war work in 1942, serving a year as a Radio Engineer in the U.S. Army Signal Corps. In 1943 he returned to Purdue as an Associate Engineer working with the Small Arms Research Program under the U.S. auspices, serving as an electronics consultant. After the termination of the Program he remained at Purdue as an Associate in the Engineering Experiment Station and electronics consultant until 1948 when he was made an Associate Professor of Mechanical Engineering. He retired in 1962 as Emeritus Professor of Mechanical Engineering but continued active as a consultant to the Inland Container Corporation in McClure Park until his death in the Lafayette Home Hospital on October 1, 1964. During his life he had served for short periods as engineer for the Firestone Tire

and Rubber Company in 1920 in Akron, Ohio, and with the General Household Utilities Company in 1934 in Marion, Indiana.

Dr. Brock became both a member and a Fellow of the American Association for the Advancement of Science in 1934. He also was a member of the American Physical Society, the American Chemical Society, the Institute of Radio Engineers, Sigma Xi and Pi Tau Sigma. He was listed in American Men of Science and Who's Who in Indiana.

While he was teaching in Nebraska State he was a member of the Wayne, Nebraska, Kiwanis Club. After returning to Purdue he became a member and a past vice president of the Lafayette Lions Club. An Elder and past chairman of the Official Board of the First Christian Church in Lafayette, he had also served his church as a Sunday School teacher.

He joined the Indiana Academy of Science in 1922 and presented papers before the Division of Physics before he left Indiana and after he returned to the State. Most of his papers in recent years were presented as joint papers with graduate students, for he was in general charge of all graduate students in the School of Mechanical Engineering. He also offered a course in the development of instrumentation and he established an electronics and measurement group within the School of Mechanical Engineering.

A Committee representing the School of Mechanical Engineering stated the following about Dr. Brock after his death: "His major contributions were as a teacher, adviser and consultant to graduate students in this school. Professor Brock was always noted by his students for his kindness, patience, and thoroughness in answering their questions and to several generations of graduate students he was their confidant and friend." Dr. Brock lived a life of effective service.

GEORGE NISSLEY HOFFER

Hummelstown, Pennsylvania
November 20, 1887

Lafayette, Indiana
December 23, 1963

The August, 1964, Indianapolis newspapers contained articles stating that a mysterious virus was attacking corn in southern Ohio and Indiana and was seriously endangering the corn yield, and the virus appeared to be spreading. A similar condition prevailed in the corn growing states east of the Mississippi River fifty years ago. Relatively very little was then known about corn diseases, soil depletion, soil aeration, fertilizers and crop rotation. However, the Indiana Legislature in 1913 had passed the Vocational Education Law which, among other things, required the teaching of agriculture in the public schools and provided for the appointment by Purdue University of County Agriculture Agents at the request of counties. The first Agents, eight in number, were appointed on July 1, 1913. The County Agents were to work directly with the farmers, live stock raisers, orchardists, and the public schools. These Agents gave little attention at first to corn except to discuss the selection, testing and storing of seed corn.

Hybrid seed corn was then almost unknown. Through farmer contacts the Agents soon discovered the seriousness of the corn problem and the Purdue Agricultural Experiment Station went to work. Before the end of the decade a young biologist, George Nissley Hoffer, was to point the way to find the true nature of corn, solve some of the problems, and ultimately receive international recognition as a plant pathologist and agronomist.

George Nissley Hoffer was born on November 20, 1887, in Hummelstown, Pennsylvania, about ten miles east of Harrisburg, in a well to do family of Dutch ancestry, going back to the famous Swiss innkeeper, Andreas Hofer. Following the completion of his public school education, he entered Lebanon Valley College, at Annville, a few miles from his home, and graduated in 1909 with a major in biology. During this time he spent one summer as a member of an expedition dredging up fish off the Bermudas, and another summer hunting fossils around Chesapeake Bay. In the Fall of 1909 he went to Purdue University as an assistant in general biology and received the M.S. degree two years later. The next three years he served as an instructor in botany, was promoted to Assistant Professor in 1914 and to Associate Professor two years later. In 1917 he became an Associate Botanist in the Agriculture Experiment Station and also an agent and pathologist for two years in charge of corn disease investigations for the Bureau of Plant Industry, U.S. Department of Agriculture. In 1929 he resigned his position at Purdue to become manager of the midwest branch of the agriculture and science bureau of the Dutch N.V. Potash Export My., Inc. Six years later he became Midwest Manager of the American Potash Institute, with offices in West Lafayette, Indiana, which position he held until his retirement in 1954. However, in 1955 he became a Consulting Agronomist for the Olin Mathieson Chemical Corporation and he continued this work until his sudden death from a heart attack on December 23, 1963, in Lafayette, Indiana.

When George Hoffer came to Purdue he was deeply interested in research. He immediately joined the Indiana Academy of Science and presented a paper at its Fall Meeting in 1909. He knew very little about corn but was interested in fungi which attack wheat, forest trees, shrubs and clover, and by 1916 he had presented seven papers before the Academy, four of which were published in the Proceedings of the Academy. However, about this time a 1915 graduate in agriculture at Purdue, James Ransom Holbert, an employee of the Funk Seed Corn Co., of Bloomington, Illinois, began working on the diseases of corn with Professor Hoffer and the two of them carried out a three-year survey in Indiana and Illinois which culminated in the publication of a joint one-page article in *Science*, March 8, 1918, "Results of Corn Investigations," that drew the attention of the U.S. Department of Agriculture, since their work pioneered in making biochemical studies of the corn plant itself and the chemistry of the soil.

Professor Hoffer presented a paper before the Academy in 1920 on "Corn Diseases in Indiana," which, however, was not published in the Proceedings. However, from 1919 on for a number of years, Dr. Max Gardner, a colleague of Professor Hoffer, made annual reports

in the Proceedings on "Indiana Plant Diseases," in which brief statements were given of Hoffer's estimates of corn losses in Indiana for the given year due to the fungi *Diplodia*, *Fusarium*, *Gibberella* and *Rhizopus* causing dry rot, ear rot, seedling blight, etc. Hoffer also published papers in the Journal of Agricultural Research, Journal of Agronomy, Phytopathology, and other journals besides contributing material to the Agricultural Experiment Station Bulletins. His last Bulletin, "Testing Corn Stalks Chemically to Aid in Determining their Plant Food Needs," appeared in 1930 as Purdue Bulletin 298. Before he left Purdue he and a colleague, Samuel F. Thornton, developed the Purdue Soil and Plant Tissue Test Kit, a diagnostic tool for determining chemically whether nitrogen, phosphorus or potassium was lacking in the nutrition of corn, small grains, hay and pasture. This Kit is still used by County Agents and farmers.

Following his resignation at Purdue in 1929 he made a trip to the Netherlands to meet the people directing the N.V. Potash Export My. and learn their procedures. His main work was to promote the use of potash as a fertilizer and to show the kind of fertilizer needed by making field and laboratory tests of the soil and plant tissue before County Agents, farmer groups and in some cases the individual farmer. After becoming affiliated in 1935 with the American Potash Institute in this same work he wrote a number of articles on the need and use of fertilizers which appeared in the Institute publication, "Better Corps with Plant Food." In the 1940's he invented the Hoffer Soil Sampler, a device for getting cores of soil to a depth of 16 inches without disturbing the soil profile. H. L. Garrard, a Purdue graduate and agronomist employed by the Institute, helped to develop this Sampler.

Since Hoffer's office was in West Lafayette he maintained close relations with the Purdue Agricultural Experiment Station. Previous to 1939 the belief prevailed that the dry-weather firing of corn was due to the lack of moisture in the soil. However, Hoffer cooperating with Professor George D. Scarseth and others at Purdue showed that the dry-weather firing was really due to nitrogen starvation. He also pointed out in 1955 that much of the failure generally charged to drouth could be eliminated by improved methods of cultivation and providing the soil with a higher organic matter content.

In 1949 he contributed a chapter, "Hunger Signs in Corn," to a book, "Hunger Signs in Crops," published by the American Society of Agronomy. He also wrote a chapter in a book, "Potash Deficiency Symptoms," that was published in Germany. As a consulting agronomist with the Olin Mathieson Chemical Corporation he wrote a number of bulletins on fertilizers. One of his last articles was on "Old Manure Gas and Anhydrous Ammonia."

For several years beginning in 1956 he developed and directed what is known as the Farm Progress Show. It began as a large scale experimental project that was carried on in Putnam and Montgomery counties, west of Roachdale, making comparative tests on some 75 to 80 varieties of hybrid corn as to the effects of the various fertilizers and the quality of the various hybrids. Some 30 to 35 farmers cooperated in these experiments by serving as judges of the corn pro-

duced. The project was financed by a large number of hybrid seed corn companies. The Farm Progress Show is still being carried on throughout the corn growing states.

Dr. Hoffer through the years was honored with the Sc.D. degree in 1920 by his Alma Mater, Lebanon Valley College, and with the same degree by Purdue in 1939. He also received the "Distinguished Service Award" from the Society of American Editors.

In 1928 Paul de Kruif devoted Chapter 8 of his book "Hunger Fighters," to Dr. Hoffer, extolling his work as a scientist who had made a fundamental contribution to human welfare.

Dr. Hoffer first joined the Indiana Academy of Science in 1909 and was made a Fellow in 1913. For several years around 1920 he allowed his membership to lapse but he rejoined in 1922 and was again made a Fellow in 1926. He became a member of the American Association for the Advancement of Science in 1917 and a Fellow in 1921. He also had membership in the Society of Plant Physiologists and the Society of Agronomy. Long a member of Sigma Xi, he served as secretary of the Purdue Chapter from 1925 to 1927. He was listed in American Men of Science. For many years he was a member of the Fertilizer Committee of the Soil Science Society of America, the Joint Committee on Fertilizer Application, the Research and Education Committee of the National Fertilizer Association and the Advising Board for the Middle West Soil Improvement Committee.

Dr. Hoffer was a modest, kindly man as well as a patient, persistent, penetrating researcher who was not easily discouraged in probing for nature's secrets. He was recognized not only as an excellent scientist but also a friendly man who enjoyed bowling and golfing with his friends. His memberships in the Masons, Elks, Kiwanis Club, Torch Club, and the Methodist Church attest his civic mindedness.

George Nissley Hoffer will be long remembered as the agricultural scientist who pioneered in the diagnostic studies of the corn plant diseases and the chemical deficiencies in soils leading to those diseases. He pointed the way for scientific methods to be applied to general agriculture. He was one of the greatest agricultural scientists of his generation and a benefactor of mankind.

ROBERT MARVIN JOHNS

Floresville, Texas
March 15, 1928

Bloomington, Indiana
October 21, 1963

In the history of science, literature and other fields one finds the names of men who had the spark of genius but died in early life often leaving behind them imperishable work. One wonders what they might have accomplished had they lived longer. In mathematics one recalls Galois dying at the age of 21, Abel at 27, and in physics Moseley at 27, and others like Keats, Shelley and Brooke in literature. The death of any young artist, poet, scientist or talented individual is to be generally regretted. Such a young scientist was Robert Marvin Johns who

had shown considerable research ability in botany before his death in Bloomington, Indiana, on October 21, 1963, at the age of 35.

Robert Marvin Johns was born on March 15, 1928, in Floresville, Texas. After graduating from Floresville High School in 1944 he spent a year at the University of Texas before entering Baylor University where he received the B.S. degree in 1949. During his last year at Baylor he served as an undergraduate assistant in botany. He accepted a graduate assistantship in botany at the University of North Carolina in 1950 and two years later the M.A. Degree was conferred on him. He remained another year at North Carolina as a Research Assistant in Genetics in the Department of Zoology. The University of Michigan granted him a Teaching Fellowship in 1953 and he spent the next five years at Michigan, serving as an Instructor in Botany during his last year, and received the Ph.D. in Botany and Mycology in 1958. That Fall he came to Indiana University as an Instructor in Botany and was promoted to Assistant Professor in 1960.

He early showed research power, publishing his first paper in 1953 in the Records of the Genetic Society of America. Before coming to Indiana University he published three papers in Mycologia, one of which was a joint paper. While at Indiana University he published a paper in the American Journal of Botany, a joint paper in Mycologia, and an abstract in the Proceedings of the Indiana Academy of Science. Shortly before his death he had completed the manuscript of a paper that was published in Mycologia in 1964. At the time of his death he and two colleagues were preparing the manuscripts of two papers on research related to Physoderma, the completion of which will add much to the understanding of these parasitic fungi.

He was an excellent student, with memberships in Phi Beta Kappa, Phi Kappa Phi and Sigma Xi, and two honorary biological societies, Beta Beta Beta and Phi Sigma. Professionally he was a member of the Botanical Society of America, Mycological Society of America, British Mycological Society, Michigan Academy of Science, Arts and Letters, and the Research Club of the University of Michigan. He joined the Indiana Academy of Science in 1959.

As a teacher he was sympathetic but nevertheless demanded serious effort on the part of his students who respected him for his intellectual integrity and his uncompromising insistence on high standards in work.

Robert Marvin Johns possessed intelligence and perceptiveness much above the average and was recognized as an able young scientist by his Departmental colleagues. Dr. M. H. Rhoades, Chairman of the Department of Botany at Indiana University, wrote "It is a tragedy that the fulfillment of his rich promise will not be realized and that the world is left poorer by his passing. He was in every way a gentleman, a thoroughly likable man, a true scholar."

JAMES FRANCIS MACKELL

Montgomery, Indiana
January 24, 1888

Terre Haute, Indiana
May 3, 1964

During World War II, in 1943, a bill was introduced in Congress that proposed the annual exchange of 1,000 students from recognized

teachers colleges in the United States with an equal number of students from similar institutions in the Republics of South America. The bill originated and was sponsored by a Committee from the Indiana State Teachers College. This Committee was headed by James F. Mackell working closely with President Ralph Tirey of the College and Congressman Karl Mundt of South Dakota who introduced the bill in Congress. No action was taken on the bill by Congress in 1943, nor later in 1945 when Congressman Mundt reintroduced the bill in a slightly revised form, as is understandable under the war conditions. Chairman Mackell and his sponsoring Committee, which had done much to help prepare the bill and to acquaint other teachers institutions with its proposals, were highly praised by Congressman Mundt for their work on this farsighted measure. Certainly this was a forerunner of much similar legislation later that led to UNESCO and saw over 47,000 students from 131 foreign countries studying in the United States in 1958-1959 and thousands of students from the United States studying abroad.

James Mackell had come to the Indiana State Normal School in 1921 as an Assistant Professor of Physics. Two years later a departmental reorganization was carried out in which the twenty-seven departments of the Normal were reduced through various combinations to thirteen departments. The Departments of Physiology, Physics, Chemistry, Biology, Agriculture, and Geography and Geology were merged into the Science Department with Dr. Louis J. Rettger serving as Dean. At this same time Professor Robert Gillum retired as Head of the Physics Department on account of ill health after serving the Normal School since 1886. In 1924 Professor Mackell was promoted to Associate Professor and three years later to Professor. In 1936 he succeeded Dr. Rettger as Chairman of the Science Department which position he held until 1954 when he retired because of ill health, after 33 years of outstanding teacher training service.

James Francis Mackell was born in Montgomery, Indiana, a small town about 25 miles east of Vincennes. He graduated in 1912 from the old three-year teacher's course at the Normal and taught from 1912 to 1916 in his home town, being Superintendent of Schools. During those years he also completed the requirements for the A.B. degree which he received from the Normal in 1915. In 1916 he became a teacher of physics in Terre Haute Garfield High School and two years later he spent a year as a teaching fellow at the University of California. From 1919 to 1921 he was a graduate student in the University of Minnesota which conferred the M.A. degree on him in 1921. Over the next eleven years he completed the work for the doctorate at Indiana University, receiving the Ph.D. in Physics in 1932.

Dr. Mackell was primarily and at heart a teacher. He was a successful and efficient administrator and also did some creditable research particularly in acoustics and the physics of the atmosphere. He presented his first paper before the Indiana Academy of Science in 1926 on "The Status of Science Education" before the General Meeting. He presented eleven papers before the Academy, four of which were joint papers, and also his President's Address in 1947 on "Graduate De-



grees for College Science Teachers." He also wrote the Academy Memorial for Professor Fred Donaghy in 1938 and the article "Scientists at and from Terre Haute" published in *Indiana Scientists* in 1951.

He joined the American Association for the Advancement of Science in 1928 and was made a Fellow in 1931. He was also a member of the Association of Physics Teachers, American Association of University Professors, Phi Delta Kappa and Sigma Xi, and was listed in *American Men of Science*. He joined the Indiana Academy of Science in 1925, became a Fellow in 1929 and its President in 1947. He was also a member of the Elks and of the Terre Haute Literary Club.

Dr. Mackell was very active in the Academy in his later years, serving on various committees, the last being the Fellows Committee from 1953 to 1957. He was Chairman of the Program Committee in 1939 and 1946, the years in which the Academy met in Terre Haute. He was always alert to be of service and was most accommodating and conscientious in his work.

During the last years of his life he suffered ill health and following the death of his wife he became a resident of the Terre Haute House where he passed away on May 3, 1964. With the death of James Mackell the State of Indiana lost an outstanding educator and in the Academy of Science he will long be remembered as one of its most faithful and active members.

ALLAN CHARLES GRAY MITCHELL

Houston, Texas
October 1, 1902

Bloomington, Indiana
November 7, 1963

The year 1937 was a critical year for the Department of Physics at Indiana University for it saw the retirement of Professor Arthur L. Foley, Head of the Department since 1897, and the death of Professor

John B. Dutcher in July, which left only two ranking members in the Department, Professor Rolla B. Ramsey and Associate Professor Mason E. Hufford. The situation was further complicated by the facts that Professor Ramsay was nearing the retirement age and President William Lowe Bryan was retiring. President Bryan was succeeded by Dr. Herman B Wells in early 1938.

Following his acceptance of the presidency Dr. Wells immediately set about reorganizing and modernizing the Physics Department by appointing the internationally known physicist, Allan C. G. Mitchell, to the headship, and arranging for the building of the then second largest cyclotron in the United States so that nuclear research could be carried on. Dr. Mitchell resigned the chairmanship of the Department of Physics at New York University to come to Indiana University.

Allan C. G. Mitchell was born in Houston, Texas, October 1, 1902, and died suddenly of a heart attack in Bloomington, Indiana, on November 7, 1963. He was the son of Samuel A. Mitchell, internationally known astronomer and Director of McCormick Observatory, University of Virginia, for 32 years and noted for his work as astronomer on ten eclipse expeditions, on some of which his son accompanied him. Allan Mitchell received his B.S. degree in 1923 at the University of Virginia, and the M.S. the following year, serving as an assistant during his last four years at the University. He spent the next three years at California Institute of Technology as a Teaching Fellow and received the Ph.D. in Physical Chemistry in 1927. He followed this with a year of nuclear study in Germany at the Universities of Munich and Gottingen. From 1928 to 1931 he was a Fellow in the Bartol Research Foundation Institute where he made a reputation as an outstanding research physicist. In 1931 he accepted an assistant professorship in Physics in New York University and three years later he was promoted to Associate Professor and made Chairman of the Department.

Dr. Mitchell brought with him to Indiana University Drs. Emil J. Konopinski and Lawrence M. Langer who during the next few years were to play prominent roles in the development of the atom bomb and subsequently the hydrogen bomb. Also a specialist on cyclotrons, Dr. Franz N. D. Kurie, was secured to take charge of the cyclotron. Indiana University through the work of Mitchell, Konopinski, Langer and Kurie was destined to become a leading research center in nuclear physics.

Dr. Mitchell hardly had time to reorganize the Department before Hahn and Strassman, in Germany, announced in February, 1939, the breaking up of the uranium atom through slow neutron bombardment and the producing of barium. Lise Meitner, a German Jew refugee in Denmark, almost immediately guessed and recognized the result of this experiment as "fission" of the uranium atom, producing barium and krypton. This experiment also resulted in the famous Einstein letter in 1939 to President Roosevelt pointing out the fundamental nature of the result and the possible dangers to the free world. President Roosevelt in the Fall of 1939 appointed an "Advisory Committee on Uranium" and the atom race began.

With the beginning of World War II in 1939 the great research centers at California and Massachusetts Institutes of Technology, the University of Chicago and other universities quickened their nuclear studies. Dr. Mitchell became a Research Associate at Massachusetts Institute of Technology in 1940. Because of its cyclotron Indiana University early began research work with Dr. Mitchell as Director, first under the sponsorship of the National Office of Scientific Research and Development and later from 1942 to 1944 as a branch of the comprehensive but largely secret "The Manhattan Engineer District" project which included numerous laboratories and employed most of the physicists of the United States and England. From January to August, 1942, Dr. Mitchell commuted from Bloomington to Chicago to work on preliminary experiments in the Chicago Metallurgical Laboratory which resulted in the famous Stagg Field Squash Court experiment on December 2, 1942, that proved that a nuclear chain reaction could be controlled. From 1944 to 1946 he was associated with the Applied Physics Laboratory of Johns Hopkins University where his knowledge and administrative ability were used in research on the development of guided missiles and aircraft directors. He received the Naval Ordnance Development Award for his work at Johns Hopkins. During all these years Drs. Konopinski and Langer were absent from Indiana University engaged in war work. Following the close of the War Dr. Mitchell continued as a consultant in government research projects such as the Project Vista of California Institute of Technology in 1951.

However, before war work seriously interfered, extensive nuclear research studies using the cyclotron were carried on by the Physics Department at Indiana University. At the General Meeting of the Academy in 1939 Professors Mitchell, Langer, Konopinski, Kurie and Hufford and several of their graduate students presented six of the eight papers given before the Physics Division. Two years later Professors Mitchell, Langer and Konopinski presented papers for the last time to the Academy until after the close of the War, although Professors Ramsey and Hufford continued to present and publish papers. Nevertheless about a dozen doctorates in Physics were conferred by the University from 1938 to 1945.

Following the resignation of Professor Kurie in 1946, Dr. Mitchell brought in Dr. M. B. Sampson to take charge of the cyclotron, and Dr. R. G. Wilkinson, a specialist in nuclear spectroscopy, who had been a member of the Metallurgical Laboratory staff in 1942 at Chicago. Drs. Konopinski and Langer also returned to Indiana University from the Los Alamos Laboratories. With this excellent group of researchers and the addition later of younger scientists, the Physics Department despite World War II conferred a total of 92 Ph.D. degrees and 119 Master's degrees during the 25-year period from 1938 to 1963 under the administration of Dr. Mitchell.

In 1943 Dr. Mitchell became a starred scientist. He was a Fellow of the American Physical Society, served on its Council from 1943 to 1947, and was Associate Editor of the Physical Review from 1941 to 1944. Earlier he had served from 1932 to 1934 as an associate editor of the Journal of Chemical Physics. He joined the American Associa-

tion for the Advancement of Science in 1925 as a Life Member and was made a Fellow in 1931. He served on the Board of Governors of the Argonne National Laboratory from 1949 to 1956. At the time of his death he had just completed his third term as President of the Midwestern Universities Research Association organized to develop a great research center in the Midwest to be equipped with a giant accelerator for the use of midwestern universities. Dr. Mitchell was also a member of Phi Beta Kappa, Sigma Xi, Alpha Chi Sigma and Beta Theta Pi.

He was the author of numerous research papers on nuclear physics published in the leading journals of physics. In 1934 he and M. W. Zemansky published a book on "Resonance Radiation and Excited Atoms." Since excited atoms are fundamental in the development of masers and lasers, so important in the control and use of light, infrared radiation and microwaves for communications programs on earth and in space, this book has been recently republished and also translated into Russian. He was also author of chapters in "Beta and Gamma Ray Spectroscopy," published in 1955.

Dr. Mitchell had an international reputation as a nuclear physicist and was long listed in Who's Who in America and American Men of Science, and in Who's Who in Atoms recently published in London.

He joined the Indiana Academy of Science in 1938 and was made a Fellow in 1954. In 1955 he became a member of the Academy Fellow Committee and served until his death. Before and after World War II he maintained an active interest in the Academy by presenting papers and encouraging members of his staff and graduate students in physics to do likewise.

The State of Indiana, Indiana University and the Indiana Academy of Science owe much to this outstanding scientist and administrator whom the future years will recognize as a Giant in the science of These Days.

TRUMAN GEORGE YUNCKER

Carson City, Michigan
March 20, 1891

Greencastle, Indiana
January 8, 1964

It is somewhat unusual to find a scientist with an international reputation in his field of science who has spent his whole professional life as an active member of the Faculty of a smaller college or university. A relatively heavy teaching load, lack of sufficient library and laboratory facilities, and free time to be active in scientific circles and meetings almost preclude such a possibility. However, Truman George Yuncker was such a scientist for he was an active member of the DePauw University Faculty for 37 years and following his retirement in 1956 still continued as Curator of the Herbarium when he was not on a research mission to some tropical area. DePauw University early recognized his talents and freely granted him leaves of absence so that he could pursue his scientific studies that could not be carried on during summers. This was possible because he had faithful and professionally

competent colleagues, all his own majors during his last 25 active years, who took over his course work during his absences. Also his wife was an able, scientific collaborator who frequently accompanied him on his extended travels and who, during the year 1932-1933, served as Acting Professor of Botany while he was on leave in Hawaii as a Yale Bishop Museum Fellow. He was the author of over 135 publications: books, research papers, memorials, presidential addresses, expository articles, and reports.



Truman George Yuncker was born on a farm near Carson City, Michigan, on March 20, 1891. A few years later his family moved to Lansing. When he was of high school age, because of family finances, he had to work and never attended high school. However, after his day's work he attended night courses in a business college which prepared him for secretarial work. In those days it was not uncommon for colleges to admit promising, mature students who were not high school graduates and, with improved conditions, Yuncker was admitted to Michigan State College and was graduated in 1914 with a B.S. degree.

While at Michigan State he worked under the botanist, Ernest A. Bessey, a graduate of the University of Nebraska, whose father, Charles E. Bessey, had been Professor of Botany at the University of Nebraska since 1884. Following his graduation Yuncker went to Nebraska as an assistant in Botany and received the M.A. degree in 1915. While he was there Professor Charles E. Bessey died and was succeeded by his colleague, Raymond J. Pool, as Professor and Head of the Department, under whom Yuncker worked. He spent the year 1915-16 as a botany teacher in Manual Training High School in Indianapolis. In 1916 he accepted an assistantship in botany at the University of Illinois, to work under Professor William Trelease, a botanist of international reputation and the first President of the Botanical Society of America.

However, Yuncker spent part of the year 1918 as a bacteriologist in the U.S. Army Medical Corps, in Washington, working on research and production of vaccines. He returned to the University of Illinois as a Fellow in Botany and received the Ph.D. degree in 1919. His thesis was on the botanical genus *Cuscuta* and was directed by Professor Trelease.

Dr. Yuncker came to DePauw University in September, 1919, as an Assistant Professor of Biology, was promoted to Associate Professor the next year. In 1921 he was made Professor of Botany. Botany was set up definitely as a distinct department in 1928 with Professor Yuncker as Head, which position he held until his retirement in 1956. While he regularly offered courses each year in bacteriology it was not until 1947 that a definite program for a major was offered in the Department and the name was changed to the Department of Botany and Bacteriology. The first major in bacteriology was graduated in 1948 and during his last nine years before his retirement 43 of the 57 graduates in his Department majored in bacteriology. Also during his last eleven years as Head of the Department he directed the work of six candidates for the M.A. degree, three in botany and three in bacteriology.

Dr. Yuncker's research was done in the taxonomy of the genera *Cuscuta*, *Peperomia* and *Piper*, the latter two genera in the family Piperaceae, tropical plants having aromatic herbage. The genus *Piper* was the special field of interest of Dr. Trelease and before his death in 1945 he requested that his former pupil, Dr. Yuncker, who had also specialized in the genus *Peperomia*, revise and bring up to date the taxonomy of the Piperaceae or pepper plants, using Dr. Trelease's notes and other materials. Granted a research professorship by the University of Illinois, Dr. and Mrs. Yuncker spent the year 1946-47 on this work which resulted in the publication in 1950 by the University of Illinois Press of two volumes, "The Piperaceae of Northern South America," containing 838 pages and 674 plates, describing 800 species of plants of the pepper family, half of which had never before been scientifically identified and described. The books were published under the joint authorship of Professors Trelease and Yuncker and undoubtedly will long be a classic and an authentic reference work on Piperaceae.

In 1919 Dr. Yuncker joined the Indiana Academy of Science and was made a Fellow in 1923. He presented his first paper, "Notes on our Indiana Dodders," before the Academy in 1919, which was published in the Proceedings for that year. Dodders, or the genus *Cuscuta*, are a large and widely distributed genus of twining, leafless, parasitic herbs, and Dr. Yuncker early became an authority on *Cuscuta*, publishing numerous papers, treatises and revisions of previously published reports as new species were discovered. His researches on the genus *Peperomia* likewise resulted in numerous papers and reports.

In 1930 the Fifth International Botanical Congress met at Cambridge, England. Professors J. C. Arthur, D. M. Mottier, M. S. Markle, and their wives, and Professor Yuncker all attended this Congress. Professors Arthur and Mottier were then Past Presidents of the Indiana

Academy of Science and Professors Yuncker and Markle later became Presidents of the Academy. During the next 32 years Dr. Yuncker spent various periods of time from summers to a year's leaves of absence in the United States, Canada, Europe, Hawaii (1932-33), (1939-40), Honduras (1934, 1936, 1938), Cuba (1948), Samoa and Niue (1939-40), Tongan Islands (1953), Jamaica (1957-58), Brazil 1962. And while at home he received collections from other parts of the world which he identified and described and which enabled him to publish papers on new species of *Cuscuta* and *Piperaceae* found in Argentine, Bolivia, Chile, Ecuador, Panama, Peru and Venezuela, and other parts of the world such as Fiji, South Africa, and Nepal.

His research reputation led to Dr. Yuncker being made an Honorary Associate Botanist of the B. P. Bishop Museum of Hawaii from 1941 to 1964. He was the recipient of two Yale-Bishop Museum Fellowships in Honolulu, two Guggenheim Fellowships, three National Science Foundation grants, a Fulbright Fellowship and a grant from the American Philosophical Society. His Alma Mater, Michigan State, honored him with the Sc.D. degree in 1941 and the Distinguished Alumni Award in 1959.

While he was on a research project in Brazil in 1962 he was injured by an automobile in Rio de Janeiro and forced to come home. While not seriously injured, he never recovered and in February, 1963, he suffered a coronary heart attack. He recovered sufficiently, however, to work with his wife and his faithful departmental colleague, Dr. Winona Welch, in the preparation of the manuscript on Brazilian *Piperaceae*, which was in the process of publication at the time of his death in his sleep on January 8, 1964.

Dr. Yuncker became a member of the American Association for the Advancement of Science in 1921 and was made a Fellow in 1925. He served the Botanical Society of America as treasurer from 1947 to 1952, vice president in 1953 and chairman of the Taxonomy section in 1937, and received its Golden Anniversary Certificate of Merit in 1956. He was a member of the American Society of Naturalists, Society of American Bacteriologists, Torrey Botanical Club, American Legion, Sigma Xi, Phi Delta Theta, and Scabbard and Blade. He was President of the Society of Plant Taxonomists in 1957.

He was an active 32° Mason, a member of the Scottish Rite, and a Grand Patron of the Indiana Chapter of the Order of Eastern Star. Long a member of the Greencastle Kiwanis Club, he served as its President in 1943. He served the City of Greencastle as its Forester for many years. An active churchman, he had held various offices in the Greencastle Gobin Methodist Episcopal Church.

For six years preceding his retirement he lectured at the Methodist Hospital in Indianapolis on Microbiology to student nurses as a part of DePauw's School of Nursing program. After his retirement he continued his work as Curator of the Truman G. Yuncker Herbarium, named in his honor, for he had begun this service as Curator in 1919 when the herbarium consisted of approximately a thousand sheets and he had developed it to 125,000 sheets. Also he had built up the Botanical Library into a comprehensive source of botanical literature.

He was an effective teacher, a wise administrator, a gracious host, and a fine citizen. He possessed that quality of personality that inspired his student majors to continue their studies after graduation. This is evident in the studies made of the college origins of persons who obtained Ph.D. degrees in botany in the decade from 1936 to 1945, and the fifteen-year period from 1936 to 1950. In the decade period DePauw had 11 graduates who received the Ph.D. degree in Botany while no other college or university in the State had more than nine. The fifteen-year period study showed DePauw still leading with 14 graduates getting the Ph.D. in Botany with the institution ranking second in the State having ten such graduates, and DePauw ranked third in the United States among the private universities, being exceeded only by the University of Chicago and Harvard.

Truman G. Yuncker was one of the most productive and faithful members in the history of the Indiana Academy of Science. He was Vice President in both 1931 and 1938 and President in 1939. Over the years he had served on various important Committees such as the Committee on the Junior Academy, 1943-47, Program, 1941, 1957, Chairman of the Research Grant, 1945-64, and others. He presented numerous papers before the Academy in Botany, Bacteriology, and the History of Science, most of which were published in the Proceedings.

Future generations of Indiana scientists will consider Truman George Yuncker as one of the scientific Giants of these Days.