

Necrology

Fay Kenoyer Daily, Butler University

EBERHARD FRIEDRICH FERDINAND HOPF

Salzburg, Austria
April 17, 1902

Bloomington, Indiana
July 24, 1983

A renowned mathematician, Dr. Eberhard Hopf, was a native of Salzburg, Austria. Born April 17, 1902, he spent his first 28 years in Europe. He was educated at a secondary school in Berlin-Friedenau from which he graduated in 1920. A Ph.D. degree was earned from the University of Berlin in 1925 and Habilitation in 1929. He was an instructor there from 1929 to 1930.

Dr. Hopf came to America as an International Fellow at the Rockefeller Foundation where he taught from 1930 to 1932. Then, he went to the Massachusetts Institute of Technology from 1932 to 1936. He was back in Europe as Professor of Mathematics at the University of Leipzig from 1936 to 1944 and Professor of Mathematics at the University of Munich from 1944 to 1948.

Dr. Hopf moved to Indiana University, Bloomington, Indiana, September 1, 1948, serving as Professor of Mathematics until 1962. From 1962 to 1972, he was Research Professor of Mathematics becoming Research Professor Emeritus of Mathematics July 1, 1972.

Dr. Hopf was one of the prominent figures in 20th century mathematics. His colleague at Indiana University, William Ziemer, said that "Many of his mathematical discoveries are now basic principles . . .". He contributed many articles to mathematical journals and wrote *Mathematical Problems of Radiative Equilibrium* (Cambridge University Press, 1934) and *Ergodentheorie* (Berlin, Springer, 1937).

Dr. Hopf was not only recognized for his eminent research reputation, but when he was named Research Professor of Mathematics at Indiana University, he was congratulated on his contributions "to a better academic life at the university".

His chief research interests were: differential equations, integral equations, calculus of variations, mathematical astronomy, theory of measure and probability, ergodic theory, celestial mechanics, and turbulent fluid flow. His work brought recognition from the American Mathematical Society in 1981 when he was awarded the Steele Prize "for a paper . . . proved to be of fundamental or lasting importance in its field, or a model of important research." According to an Indiana University News Release (June 2, 1981) the award was actually for three papers. Dr. Hopf contributed a method of solving equations applied to problems of fluid mechanics, solid mechanics and chemical reactor theory. Another paper analyzed turbulence in a viscous fluid inspiring further work in the field. The third paper analyzed an important equation in fluid dynamics laying the foundation for a method now used to deal with equations describing shocks.

Frequently, Dr. Hopf was invited by universities and scientific organizations to give lectures. He visited the University of Heidelberg, Göttingen, Mainz, Tübingen and Munich in 1954. He lectured at a mathematical conference on ergodic theory in California, 1955. He was Visiting Professor of the Mathematics Research Center at the University of Wisconsin from February to August, 1959. He was invited to take part in international invitational conferences in Varenna, Italy, in 1960.

Dr. Hopf joined the Indiana Academy of Science in 1951 and gave a paper that year on *A mathematical problem in hydrodynamics*. He served as Section Chairman of

the Mathematics Section in 1952. In 1953, he gave another paper on *Quadratic forms in vector spaces*. Other societies to which he belonged were: German Mathematical Society, American Mathematical Society, Saxon Academy of Science, Bavarian Academy of Science, and Sigma Xi. He was co-editor of mathematical monographs and a mathematical journal. Biographic sketches of Dr. Hopf can be found in *Who's Who in Indiana* (p. 107), *Who's Who in the Midwest* and *American Men and Women of Science* (1982), 15th edition. We are grateful to Indiana University for providing much archival material.

After suffering a long illness, Dr. Eberhard Hopf died July 24, 1983, in the health center of the Meadowood Retirement Community at Bloomington, Indiana, where he lived. He had achieved a very fruitful, distinguished career during his 81 years of life.

RODERIC MALCOLM KOCH

Evansville, Indiana
September 29, 1904

Evansville, Indiana
November 12, 1981

Mr. Roderic Malcolm Koch was an Evansville manufacturing executive with many facets to his interests. He was born in Evansville, Indiana, September 29, 1904. His early education was obtained from the Centennial Grade School and Central High School of Evansville. He attended the University of Wisconsin from 1922 to 1923, and received an A.B. degree from Evansville College in 1945. He received an honorary degree from Indiana State University-Evansville in 1980 for his many contributions to the cultural life in Evansville.

Mr. R.M. Koch was the grandson of George Koch who founded George Koch and Sons, Incorporated, in 1873 in Evansville. Roderic joined the firm as machine shop foreman in 1924 which position he held until 1930. He was then assistant shop superintendent from 1930 to 1934, superintendent from 1934 to 1938, assistant general manager from 1938 to 1941, general manager from 1941 to 1951, vice president from 1951 to 1955, executive vice president from 1955 on. He also was president of the Standard Industrial Products Incorporated, Evansville; Koch Industrial Equipment, Incorporated; McMasters Incorporated Plastic Manufacturers; R. Malcolm and Associates advertising agency. He was vice president of Kaysons Incorporated; Modern Products, Incorporated; on the Board of Directors of Santa Claus Samaritans, Santa Claus, Indiana; treasurer of the Evansville Public Schools from 1943 to 1946; president and director of the Astronomy Section of the Evansville Public Museum, president of the Indiana Foundation for Arts and Sciences, 1966.

Mr. Koch was a philanthropist who had an interest and curiosity about many things. He was instrumental in the founding of the Evansville Museum which was built entirely with public donations. The planetarium was named for him, and he championed the cause of science there which was one of the main reasons for the expansion in that area. The first R. Malcolm Koch lecture which was on space exploration was given just before his death. He also donated paintings to the museum and was interested in coin collecting.

Mr. Koch found time to devote to the Salvation Army by serving on the Board. He received the "Others Awards" from them in 1980 for his work with the Army and the museum, the first time a board member had ever received the award.

Santa Claus Land, Incorporated, was also a family operated business. According to his brother, Mr. R.M. Koch was instrumental in establishing Holiday Village at Santa Claus Land and was active in serving on the board.

Mr. Koch joined the Indiana Academy of Science in 1949 listing Chemistry and Geology and Geography as his chief interests. He was a member and director of the Evansville Manufacturers and Employers Association, Evansville University Presidents Club and Alumni Association vice president (1966), Evansville Astronomical Society, Conrad Baker Foundation, Deaconess Hospital Foundation, Wessleman Park Nature Center, Indiana State University-Evansville Century Club and a member of the advisory board of the Evansville Foreman's Club. For biographic data see *Who's Who in the Midwest*. Mildred I. Harmes of George Koch Sons, Incorporated, a former assistant to Mr. Koch, kindly provided an obituary prepared for press release and a reprint from the Evansville Press.

Mr. Koch was still working for the air conditioning and industrial equipment company founded by his grandfather when he was stricken at work. He died later at the Deaconess Hospital in Evansville, November 12, 1981. He was highly regarded in his community. In a fine article about him on the front page of the *Evansville Press* (Nov.

13, 1981) it was stated "If Evansville could have but a few dozen more R. Malcolm Kochs, there would be ample reason for optimism about our community's future."

BASIL ELWOOD MONTGOMERY

Near Cynthiana, Indiana
October 10, 1899

Lafayette, Indiana
January 19, 1983

Dr. B. E. Montgomery was born in Gibson County along the Posey County line near Cythiana, Indiana, October 10, 1899. He attended the Cythiana grade school and graduated from the Poseyville High School in 1918.

His teaching career began in 1918 in a one room schoolhouse where he taught all eight grades. He taught public schools until 1928 during which time he was a teacher of Science, History and Latin. He was also a teacher and principal of schools in Posey (1918-1921); Pennville, Wayne (1922-1924); Monroe, Adams (1925-1926); Owensville, Gibson (1926-1927); and Evansville, Vanderburg (1927-1928) Counties in Indiana. His higher education was interspersed between his winter teaching schedule earning a B.Sc. degree from Oakland City College in 1922. He taught History and Mathematics there from 1920 to 1922. In 1925, he obtained an M.S. degree at Purdue University majoring in Entomology and Education. He was also a teaching assistant in Biology there. He studied Parasitology at Iowa State University (Iowa City) during the summer of 1927, and was a graduate assistant in Entomology and Zoology at Iowa State University (Ames) from 1928 to 1929.

In 1929, he came back to Purdue University as an Instructor of Entomology where they needed someone with a knowledge of beekeeping. He was hired because of his long time interest and expertise with bees which began in childhood when he learned beekeeping methods from his father. Related research was one of his chief interests professionally.

In 1936, he received a Ph.D. degree from Iowa State University.

During World War II between 1939 and 1943, he also taught Mathematics at Purdue University.

Dr. Montgomery was married in 1930 to Esther Barrett and they raised a daughter, Emily. Both Mrs. Montgomery and Emily played an important part in Dr. Montgomery's career and he named dragonflies for them. His interest in dragonflies was influenced by Dr. E. B. Williamson, president of the Indiana Academy of Science in 1918, with whom Dr. Montgomery became well acquainted when teaching in Adams County. It was about twelve miles from Monroe, where Dr. Montgomery was teaching, to Bluffton where Dr. Williamson was a banker and lived. Dr. Montgomery spent many nights studying notes and manuscripts loaned by Dr. Williamson. After Dr. Williamson died in 1933, Dr. Montgomery carried on much of Dr. Williamson's work.

During the 1900s, scientists were not able to specialize in the subjects taught to any great extent. Consequently, Dr. Montgomery taught a variety including General Entomology, Aquatic Entomology, History of Entomology, Morphology, Physiology, Entomological Techniques, Literature of Entomology, Beekeeping, Biology and Life History of Insects, Economic Entomology, Systematics and Taxonomy.

His work became well known internationally and a number of research grants, honors and responsibilities came his way.

He was with the Entomology Laboratories of the U.S. Department of Agriculture in New Jersey, Louisiana, Indiana and Ohio during the summers from 1922-1948. He then received Fulbright grants in 1949 and 1950 to specialize in bumblebees and cloverseed production at the Cawthorn Institute, Nelsen, New Zealand. In the summers of 1955 and 1956, he was at Point Barrow, Alaska, as a Research Biologist with the Office of Naval Research, Arctic Institute of North America to study the ecology of bees.

In 1942, a Sigma Xi grant was received by him to study dragonflies at the Museum of Comparative Zoology at Cambridge, Massachusetts. In 1960, 1964, 1965 and 1968, National Science Foundation Grants were given to him to study specimens in European museums. He received the D.Sc. Honoris Causa from Oakland City College in 1978.

In addition to his studies on distribution, seasonality and classification of insects, he studied the relation of climatic factors, chiefly photoperiod and temperature, upon plant production and growth rate of insects. The development of special strains of legumes and bee handling techniques were sought to improve agricultural production. Dr. Montgomery developed a method whereby legumes and other crops may be pollinated by bees in cages in order to study them. He also developed a strain of clover which produces two seeds in a pod instead of one. He studied climatic factors and photoperiod impact upon the biology and life history of dragonflies during 1960 and 1968 under the auspices of Purdue University Experiment Station. He produced more than 100 journal articles. A bibliography of papers is given in a fine biographic sketch of him in 1974 by J.M. Macklin entitled *To B. Elwood Montgomery on his 75th birthday* published in *Odonatologica* (III (4):203-209) from which much information in this report was derived. (Dr. Montgomery, aware that his days were numbered, kindly supplied us with a copy. His thoughtfulness was manifest in many things that he did.) Dr. Montgomery owned one of the largest collections of dragonflies. He listed the dragonflies of North America and compiled a bibliography of all papers written about them. For a while, Dr. Montgomery initiated and edited *Selysia*, a newsletter on Odonatology. He also edited the *Colloquium on Odonata*, 1963, which was a report from the first worldwide colloquium on Odonata organized by Dr. Montgomery and held at Purdue University in 1963.

He did much to popularize science and gave many public lectures using live bees to illustrate the talks. One year, early in his career, he gave 48 lectures in a four-month period to a wide audience of pre-school students as well as retired people. He wrote *Bumblebees and bombiculture* for *Outdoor Indiana* (June, 1961). A short biography of the author accompanied that.

Dr. Montgomery became Professor Emeritus in Entomology at Purdue University June 30, 1968. He then taught at Marian College (1969) in Indianapolis and Frostburg State College (1969-1972) in Maryland.

One of Dr. Montgomery's hobbies was photography which was used often for illuminating illustrated lectures.

Other biographies of Dr. Montgomery can be found in *Who's Who in Indiana* (p. 154), and *Indiana Scientists* by S.S. Visher. His work was often the subject of Indianapolis newspaper articles. He was the subject of an article in the *Indianapolis Star Magazine*, November 17, 1957. He also wrote to Walter Cory to share with us some recollections and activities in the Academy. These were published in the *Newsletter* 36, April, 1982. Dr. Montgomery joined the Indiana Academy of Science in 1922 and was quite active. He was a member just over 60 years. He was elected to Fellow in 1929 over 50 years ago. He served on two committees in 1927-Program and Archeological Survey. From that year forward, he missed very few years in which he was not serving in some capacity. He was on the Biological Survey, Program (twice), Resolutions and Fellows committees and was often chairman and thus on the Executive Committee also. He was Chairman of the History of Science Section in 1955 and of the Entomology Section in 1962 and 1963. He was again Chairman of the History of Science Section in 1969.

Dr. Montgomery gave about 45 papers before Academy Sessions. Many of these were in his series on Indiana dragonflies. He related the history, *A century of Odonatology in Indiana* before the History of Science Section in 1944. Many of his

other papers touched on subjects relating to bees, history of Entomology, etc. Dr. Montgomery addressed the Academy at the spring meeting of 1976 on the *Life and times of Thomas Say* (Proc. I.A.S. 86: 228-229. 1977. Abstract based on address). It was the National Bicentennial and Sesquicentennial of Science in Indiana and also the sesquicentennial of the year Thomas Say and other scientists came to the Owen community at New Harmony, Indiana.

Dr. Montgomery died in Lafayette on January 19, 1983, after a lingering battle with cancer. His career had not only led to important scientific discoveries but also captured the popular fancy. He was an energetic man, kind friend and staunch supporter of the Academy.

HERMAN GEORGE WILHELM, JR.

Somerset, Pennsylvania
 October 18, 1920

Kokomo, Indiana
 August 10, 1982

Somerset, Pennsylvania, was the birthplace of Mr. H. G. Wilhelm, geneticist and microbiologist. He was born October 18, 1920, and was raised in the mountains of western Pennsylvania.

He was a graduate of the University of Pittsburgh receiving a B.S. degree in 1941 and an M.S. degree in 1947. His major subjects were genetics, microbiology, anatomy and physiology. He became a lieutenant in the United States Navy and served from 1942 to 1946 during World War II. He was executive officer and navigator for the USS Platte. From 1947 to 1951, he was an Instructor in Biology at the University of Dayton, Dayton, Ohio. He was assistant professor at Morris Harvey College from 1951 to 1955 when he returned to the University of Pittsburgh to work on a doctorate in microbiology. Due to a growing family and attendant financial difficulties, he could not complete his degree. He taught at St. Joseph School of Nursing as well as various other schools of nursing in the Pittsburgh area. He also served the Department of Health, Allegheny County, Pennsylvania.

Mr. Wilhelm came to Indiana in 1962 to teach at Franklin College, Franklin, Indiana, where he stayed until 1966. He then moved to the Indiana University campus at Bloomington, Indiana for a year, and then on to Kokomo, Indiana where he taught at Indiana University at Kokomo.

Mr. Wilhelm was a very dedicated and effective teacher. In a memorial resolution by Ruth Hanig, Gary Dolph and Steven R. Johnson (kindly provided by Indiana University at Kokomo) some students' quotes were included such as: "He brought microbiology down to earth" and "We really learned microbiology." He made a great effort to assist students in the laboratory and present material relevant to special courses of study for nurses and other scientific endeavors that the students might be pursuing. Mr. Wilhelm was especially interested in human genetics and genetic engineering. He also was interested in environmental matters.

Mr. Wilhelm was a member of the Indiana Academy of Science only a short time joining in 1979 as a senior member. Bacteriology was listed as his major interest. He was also a member of the A.A.A.S. and fraternal groups of Masons, Shrine, and Scottish Rite. He was an adviser for the DeMolay and on the board of directors for the Howard County Red Cross. He is listed in *American Men of Science* (9th ed.) 1955, Physics and Biology Section.

Mr. Herman George Wilhelm, Jr. was very ill in December 1981 developing a collapsed lung and spending New Year's Day in an intensive care ward. He recovered enough to return to teaching in March, 1982, carrying a full teaching load during the second summer session with an arranged course in Genetics extra. He was very ill the last few weeks of the session and had just prepared his final grades before he died. He was at home listening to a selection from his large collection of violin music when he died August 10, 1982. The memorial resolution by his colleagues demonstrates the high regard and affection with which he was held by both student and faculty at Indiana University at Kokomo.