

Memorial to William Eugene Ham 1916-1970

DONALD FRANCIS TOOMEY

*Faculty of Earth Science, The University of Texas of the Permian Basin,
Odessa, Texas 79762*



On July 10, 1970, the geological profession lost one of its most distinguished members, William Eugene Ham. Bill succumbed to a heart attack in St. John's Hospital, Victoria, British Columbia, Canada, at the age of 54. He had been vacationing in Victoria with his wife Betty and their youngest son Donald, following the combined annual meeting in Calgary of the American Association of Petroleum Geologists and the Society of Economic Paleontologists and Mineralogists. The accompanying photograph was taken only a few hours before his first heart attack on June 30th. Hospitalized for two weeks following this initial attack, he appeared to be recovering, and it was a great shock to his family and many friends when a second seizure caused his death.

Bill was born in Guthrie, Oklahoma, on February 3, 1916. He was proud of his Swedish grandfather, an Oklahoma pioneer, who made the Land Run in 1889. His heritage also included music, for Bill's father made violins, and at an early age Bill learned to play on a copy of a Guarnerius that his grandfather had made. Bill's mother taught instrumental music and had a degree from a small school in Lindsborg, Kansas.

Bill graduated in 1932 from Guthrie High School. He attended Central State College in Edmond, Oklahoma, for one year, and then enrolled in Oklahoma A&M College (later Oklahoma State University). There Bill came under the aegis of Ray L. Six and was introduced to geology. His enthusiastic response to the science prompted him to transfer to the University of Oklahoma at Norman, where he earned a bachelor of science degree in geology. His association with OU was to last many years. Continuing his education, Bill enrolled at OU for a master's degree, which he received the following year. His master's thesis, "Origin and Age of the Pawhuska Rock Plain of Oklahoma and Kansas" was also the subject of his first major lecture, delivered at the 1939 annual meeting of the Geological Society of America in Minneapolis.

While in graduate school, Bill met Elizabeth (Betty) Awbrey, who was also a geology major and who received her master's degree at the same time as Bill. They were married a year later, on June 1, 1940.

As a student at OU, Bill was quickly recognized as a superior worker by his peers, and at the completion of the master's degree he was asked to stay on as an instructor in mineralogy and petrology from 1939 to 1941. On July 1, 1941, Bill joined the staff of the Oklahoma Geological Survey, beginning a career that was to span almost 30 years. At this stage, the Oklahoma Geological Survey was concentrating on investigating various mineral resources that had previously not received much attention, but which were thought to hold the key for the future industrialization of the state. Bill, with his characteristic energy and enthusiasm, fitted perfectly into this program, and as a result, he developed within a relatively few years the expertise that was to enhance his effectiveness as a geologist as well as the prestige of the Oklahoma Geological Survey. One of Bill's

early reports, Bulletin 65, "Geology and Glass Sand Resources, Central Arbuckle Mountains, Oklahoma," had considerable influence in the decision of one of the nation's largest glass works to come to Oklahoma. In fact, a letter to Bill from an official of the Hazel-Atlas Glass Company states, "Your Bulletin No. 65 is one of the finest material surveys I have ever read. I was surprised to see the good balance between mineralogy, geology and the operator's viewpoint. It was a pleasure to read it." This ability to balance practicality and good basic geology in a concise manner was to be a hallmark of all Bill's writings.

During the middle 1940s, Bill had begun a comprehensive study of the Upper Cambrian and Lower Ordovician rocks of the Arbuckle and Wichita Mountains of southern Oklahoma. This study became the basis for his doctoral dissertation at Yale University, which he wrote during a year's leave of absence (1947 to 1948) on a Stanolind Research Fellowship. Bill's dissertation, "Geology and Petrology of the Arbuckle Group in the Arbuckle Mountains, Oklahoma," became the "bible" of many Oklahoma geologists. Bill thereafter continued his work in the Arbuckles and mapped additional units. A final map by Bill, in conjunction with his field assistant M.E. McKinley, was published in 1954. As an outgrowth of this work in the Arbuckle Mountains, and to a lesser degree of work in the Wichita Mountains, Bill developed a lifelong interest in the study of carbonate rocks and became a leader in this field. Recognition of this fact by his colleagues led to Bill's chairmanship of the 1961 AAPG-SEPM symposium in Denver on the classification of carbonate rocks; he eventually served as editor of the landmark AAPG volume Memoir 1, published in 1962. At his own initiative, he was preparing for publication a handbook titled "Illustrated Nomenclature of Carbonate Rocks." Bill had made substantial progress on this project, but it was incomplete at the time of his death.

Bill Ham was appointed assistant director of the Oklahoma Geological Survey from 1951 to 1952, acting director from 1952 to 1954, and associate director from 1959 to 1966. He was a visiting professor at the University of Oklahoma from 1964 to 1970, and at the University of Kansas during the 1966-1967 school year. While at Kansas he taught courses in carbonate rocks, and in a letter dated June 22, 1967, twelve of his students expressed their appreciation to him for the energy, devotion, and knowledge that he had extended to them. With this letter of appreciation they also presented Bill with a *geologic hammer mounted on a plaque, an honor of which Bill was justifiably proud.*

In his all too short geological career Bill published more than 100 articles. These can be divided into three broad categories: (1) numerous Survey reports concerned primarily with the mineral resources of Oklahoma; (2) mapping projects, especially those dealing with the Arbuckle Mountains, which formed the basis of innumerable field conferences for geological societies, oil companies, and individuals; and (3) a range of publications dealing with broader geologic subjects. These include three outstanding works: "Basement Rocks and Structural Evolution of Southern Oklahoma" (1964), "Modern Concepts and Classification of Carbonate Rocks" (1962), and "Paleozoic Epeirogeny and Orogeny in the Central United States" (1967). Of the 1964 publication the late Adolph Knopf of Stanford University wrote to Bill, "You have made the geology of Oklahoma vastly more interesting to some of us outsiders than it was before!"

Bill also supervised and directed many theses and dissertations, and in this process gave much of himself and of his extensive knowledge of his native state. Some of his outstanding students include such geologists as Robert J. Dunham, James Stitt, and Kenneth S. Johnson.

An excellent speaker, Bill Ham was much in demand as a lecturer. During 1963 and 1964 he was chosen a distinguished lecturer for the American Association of Petroleum

Geologists, and he spoke effectively on research pertaining to his basement rock studies. These lectures took him to 30 universities and AAPG affiliated societies all over the United States. Bill lectured on various geological topics to many local geological societies, universities, and oil companies' continuing education programs. He also served from 1960 to 1965 as an expert witness for the U.S. Department of Justice, especially in lawsuits over quarrying operations.

In the middle of 1969, Bill suffered a painful back injury that required surgery and kept him confined to bed for several months. Recovery was slow and necessitated the procedure of once again learning to walk. To his friends, it was a good sign that he felt confident enough to make the meeting in Calgary and to plan an extended vacation. Thus the heart attack that felled him in Victoria was totally unexpected.

Bill was an active participant in many geological organizations. He was a member of the American Association of Petroleum Geologists (member, Research Committee, 1959-1966; chairman, Rock Subcommittee, 1959-1963; editor, *Memoir I*, 1962); member of the Society of Economic Paleontologists and Mineralogists (chairman, Best Paper Award Committee, 1964; vice chairman, annual meeting at Oklahoma City, 1968); Fellow of the Geological Society of America; Fellow of the Oklahoma Academy of Science; member of the American Institute of Mining, Metallurgical, and Petroleum Engineers (member and chairman, Industrial Sands Committee, 1955-1958); and member of the Geochemical Society, Sigma Xi, and Sigma Gamma Epsilon. In addition he was a member and delegate to the International Geological Congresses at Mexico City (1956) and Copenhagen (1960).

At 10 a.m. on Thursday, July 16th, the Rev. David Penticuff, the Rev. Larry Gatlin, and the Rev. Richard Virtue celebrated the Requiem Eucharist for Bill Ham at St. John's Episcopal Church in Norman, Oklahoma. The service was attended by many of Bill's friends and co-workers, some of whom came great distances to pay their final respects. Interment was in the IOOF Cemetery in Norman.

Surviving Bill are his wife, Betty; three sons, William Edward, Robert Powell, and Donald Stuart; and one grandchild. He also leaves his mother, Mrs. Pearl Ham of Guthrie, Oklahoma; a sister, Mrs. Louise Wolverson of Claremore, Oklahoma; and three brothers, Sidney Ham of Houston, Texas, Edward Ham of Farmingdale, New York, and Kenneth Ham of Tulsa, Oklahoma.

The words of William Cullen Bryant in his poem "Thanatopsis" seem to express Bill's attitude toward the world.

Go forth under the open sky, and list
 To Nature's teachings, while from all around—
 Earth and her waters, and the depths of air—
 Comes a still voice:—Yet a few days, and thee
 The all beholding sun shall see no more
 In all his course; nor yet in the cold ground,
 Where thy pale form was laid, with many tears,
 Nor in the embrace of ocean, shall exist
 Thy image. Earth, that nourished thee, shall claim
 Thy growth, to be resolved to earth again;
 And, lost each human trace, surrendering up
 Thine individual being, shalt thou go
 To mix forever with the elements;
 To be brother to the insensible rock,
 And to the sluggish clod, which the rude swain
 Turns with his share, and treads upon.

SELECTED BIBLIOGRAPHY OF W. E. HAM

- 1944 (and Merritt, C. A.) Barite in Oklahoma: Oklahoma Geol. Survey Circ. 23, 43 p.
 ——— (and Oakes, M. C.) Manganese deposits of the Bromide district, Oklahoma: Econ. Geology, v. 39, no. 6, p. 412-443.
- 1945 *Geology and glass sand resources, central Arbuckle Mountains, Oklahoma*: Oklahoma Geol. Survey Bull. 65, 103 p.
- 1947 (and Frederickson, E. A.) Cambrian and Ordovician rocks of the Wichita Mountains: North Texas Geol. Soc. Guidebook, 10 p.
- 1949 *Geology and dolomite resources, Mill Creek-Ravia area, Johnson County, Oklahoma*: Oklahoma Geol. Survey Circ. 26, 104 p.
 ——— Geological and petrological investigations of Oklahoma volcanic ash: Oklahoma Geol. Survey Circ. 27, p. 48-84.
- 1952 Algal origin of the Birdseye limestone in the McLish Formation: Oklahoma Acad. Sci. Proc., v. 33, p. 200-203.
- 1954 (and McKinley, M. E.) Geologic map and section of the Arbuckle Mountains, Oklahoma: Oklahoma Geol. Survey Map A-2, scale 1:72,000.
 ——— Collings Ranch Conglomerate, Late Pennsylvanian, in Arbuckle Mountains, Oklahoma: Am. Assoc. Petroleum Geologists Bull., v. 38, p. 2035-2045.
- 1955 *Origin of dolomite in the Arbuckle Group, Arbuckle Mountains, Oklahoma*: Oklahoma Univ. 4th Symposium on Subsurface Geology, Proc., p. 67-74.
 ——— Field conference on geology of the Arbuckle Mountain region: Oklahoma Geol. Survey Guidebook 3, 61 p.
- 1956 (and Chase, G. W., and Frederickson, E. A.) Resume of the geology of the Wichita Mountains, Oklahoma, in *Petroleum geology of southern Oklahoma*, Vol. 1: Am. Assoc. Petroleum Geologists, p. 36-55.
- 1958 (and Curtis, N. M.) Gypsum in the Weatherford-Clinton district, Oklahoma: Oklahoma Geol. Survey Mineral Rept. 35, 32 p.
 ——— Correlation of pre-Stanley strata in the Arbuckle-Ouachita Mountain regions, in Cline, L. M., Hilsweck, W. J., and Feray, D. E., eds., *Geology of the Ouachita Mountains - A symposium*: Dallas Geol. Soc. and Ardmore Geol. Soc., p. 71-86.
- 1960 Middle Permian evaporites in southwestern Oklahoma: Internat. Geol. Cong., 21st, Copenhagen 1960, Rept., pt. 12, p. 138-151.
- 1961 Correlation of pre-Stanley strata in the Arbuckle-Ouachita Mountain regions: Oklahoma *Geology Notes*, v. 21, p. 204-224.
 ——— (and Mankin, C. J., and Schleicher, J. A.) Borate minerals in Permian gypsum of west-central Oklahoma: Oklahoma Geol. Survey Bull. 92, 77 p.
- 1962 *Economic geology and petrology of gypsum and anhydrite in Blaine County, Oklahoma*: Oklahoma Geol. Survey Bull. 89, p. 100-152.
 ——— (and Pray, L. C.) Modern concepts and classifications of carbonate rocks: Am. Assoc. Petroleum Geologists Mem. 1, p. 1-19.
 ——— Ed., *Classification of carbonate rocks: A symposium*: Am. Assoc. Petroleum Geologists Mem. 1, 279 p.
- 1963 Basement rocks and structural evolution of southern Oklahoma—A summary, in Ardmore Geol. Soc. Field Conf. Guidebook 1963: 51 p.
- 1964 (and Johnson, K. S.) Copper in the Flowerpot Shale (Permian) of the Creta area, Jackson County, Oklahoma: Oklahoma Geol. Survey Circ. 64, 32 p.
 ——— (and Denison, R. E., and Merritt, C. A.) Basement rocks of southern Oklahoma: Oklahoma Geol. Survey Bull. 95, 302 p.
- 1967 (and Wilson J. L.) Paleozoic epeirogeny and orogeny in the central United States: Am. Jour. Sci., v. 265, p. 332-407.
 ——— (and Toomey, D. F.) *Pulchritamina*, a new mound-building organism from Lower Ordovician rocks of west Texas and southern Oklahoma: Jour. Paleontology, v. 41, p. 981-987.

- 1968 Regional geology of the Arbuckle Mountains, *in* Field Trip Guidebook, Am. Assoc. Petroleum Geologists 53rd Ann. Mtg.: 61 p.
- 1969 Regional geology of the Arbuckle Mountains, Oklahoma: Oklahoma Geol. Survey Guidebook 17, 52 p.
- (and Rowland, T. L.) Burial cementation in the Wapanucka Limestone (Pennsylvanian) of Oklahoma: Bermuda Biol. Sta. Research Spec. Pub. 3, p. 152-157.