



**Tenth Annual
American
Mining Hall of Fame
Awards Presentation
and Banquet**

December 5, 1992

Sponsored by

Mining Club of the Southwest Foundation, Inc.

The Westin La Paloma, Tucson, Arizona

Program

Reception 6:30 p.m.

Banquet Dinner 7:30 p.m.

Ceremony 9:00 p.m.

Welcoming Remarks - A. Frederick Banfield, Jr.

Introduction of Head Table and Other Honored Guests - Mike Greeley

Presentation of 1992 Inductees - J. S. Douglas by John Lacy

A. R. Wilfley by Herb Welhener

Presentation of 1992 Medal of Merit - A. A. Brant by Walt Heinrichs

W. C. Epler by Mike Canty

Introduction of 1992 Recipient - T S Ary by Mike Greeley

Featured Address - T S Ary

Adjournment

Reception Hosted by

ASARCO Incorporated
Capitol Castings, Inc.
Chemstar Lime, Inc.
Cyprus Copper Company
E.L. Montgomery & Associates
Empire Machinery Company
Filter Products Corporation
Henkel Corporation
Independent Mining Consultants
Industrial Motor & Control, Inc.
Magma Copper Company
Mintec, Incorporated
M3 Engineering & Technology, Inc.
Oracle Ridge Mining Partners
Peabody Coal Company
Phelps Dodge Corporation
Venture Drilling
Western States Engineering &
Construction
Western States Tire Co.

1992 MCSW Officers

A. Frederick Banfield, Jr. President
Herb E. Welhener, 1st VP
John W. Cassarino, 2nd VP
Susan F. Armijo, Sec.-Treas.

1992 Hall of Fame Committee

Mike Greeley, Chairman
Mike Canty
Jerry Dorlac
Milt Evans
Walt Heinrichs
John Lacy
Dave Ridinger
Cal Rooker
Jack Thompson
Herb Welhener

American Mining Hall of Fame 1992 Recipient



T S Ary

T S Ary began his career in the minerals industry in 1951 with The Anaconda Mining Company at Butte, Montana, where he served as a shift boss and assistant superintendent of several mines on the Butte Hill before moving to Anaconda's Geology Department. Prior to that time Ary had been a navy carrier pilot in World War II and was released from active duty in 1947. He received his Bachelors Degree in Mineral Sciences (Mining Engineering) from Stanford University and has completed graduate work in mineral law, land management, international studies and business.

In 1953, Ary joined Union Carbide Corporation as a mining engineer and Superintendent of a vanadium mine in Rifle, Colorado. He was named Vice President of Union Carbide Exploration Corporation in 1967. In 1975 he joined Utah International, Inc., as Vice President of Exploration and Director of Development and in 1980 was appointed President of Kerr-McGee Corporation's Minerals Exploration Division in Oklahoma City, Oklahoma. While at Kerr-McGee he was responsible for worldwide hard-mineral and coal exploration, as well as land acquisition and management functions of all operating divisions, except oil and gas.

In 1988 Ary was sworn in as the 18th Director of the United States Bureau of Mines. Ary has served on the National Strategic Materials and Minerals Program Advisory Committee to the Secretary of the Interior for four years, was on the United States State Department Task Force to the United Nations Law of the Sea Convention and served on the Mineral Advisory Committee to the Department of Commerce. During Ary's distinguished career he has been Chairman of the Minerals Availability Committee of the American Mining Congress, Chairman of the Natural Resources Committee of the National Association of Manufacturers, Director of the American Indian Science and Engineering Society, Chairman of the Colorado Plateau Section of the American Institute of Mining, Metallurgical and Petroleum Engineers and Director of the Colorado Public Expenditures Council.



**Mining Club of the Southwest Foundation
Tucson, Arizona**

American Mining Hall of Fame

1992 Inductee



James Stuart Douglas

1868 - 1949

James S. Douglas was born at Harvey Hill Mine, Megantic Township, Quebec, and moved to Pennsylvania at age seven. His drive for independence first showed itself at age 17 when he returned to Canada to work in the construction of the Canadian National Railroad. He began his mining career working in an assay office in Bisbee, Arizona, but was soon appointed as Superintendent of three small mines operated by the Phelps Dodge Co.

During the first decade of the 20th century, Douglas, from his position of manager of Phelps Dodge's Moctezuma Copper Company mine and smelter in Sonora, oversaw the establishment of the smelter town of Douglas, Arizona (named for his father, Dr. James Douglas), the construction of a railroad from Douglas to the mines, and the organization of the Bank of Bisbee and the Bank of Douglas. While in Mexico, Douglas showed his practical bent in earning his nickname of "Rawhide Jimmy" when he ordered the use of rawhide to protect the rollers of an incline from damage by cables. With the onset of World War I, Douglas volunteered his services as a "dollar-a-year" man in supervising the Red Cross stores in France for the entire Western Front for which he was decorated by the French government as a Chevalier of the Legion of Honor.

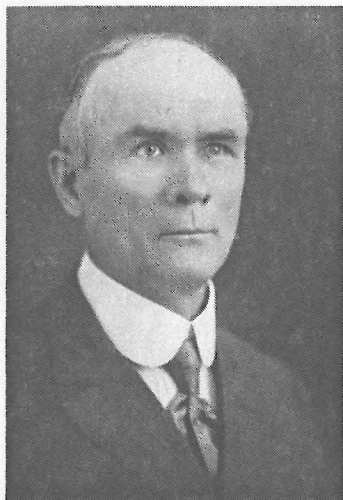
In 1922 Douglas took over the reorganization of the United Verde Extension mine in Jerome, and after four years struck the bonanza that made the UVX famous. Douglas guided the UVX through labor unrest, the Great Depression and unstable copper prices to a 20-year production record of \$130 million, paying stockholders more than \$50 million in dividends.

James S. Douglas was a superb practical mine operator, a man sensitive to the culture of Mexico, a patriot, and one who was eager to share the rewards of an enterprise with others.



Mining Club of the Southwest Foundation
Tucson, Arizona

American Mining Hall of Fame 1992 Inductee



Arthur Redman Wilfley
1860 - 1927

Arthur Wilfley was born in Maryville, Missouri, and moved to Kokomo, near Leadville, Colorado, with his family when he was 18 years old. Here the family hoped to set up a lumber mill to supply building materials for the gold rush boom towns. Wilfley took work as a mineral survey assistant, and to supplement his grade-school education learned assaying from a chemist and in the evenings studied books on mining engineering. In 1883 he passed an examination to qualify as a United States deputy mineral surveyor and went into partnership with his employer as an engineer.

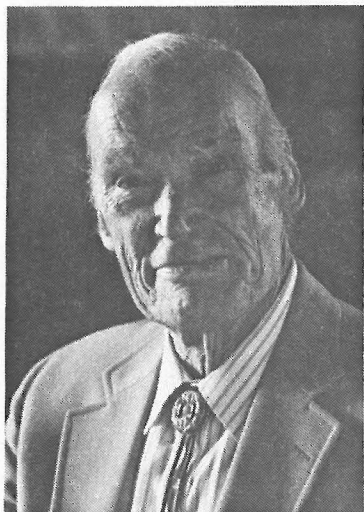
As recoverable silver played out in 1884, Wilfley, one of the few who stayed in Kokomo, believed that advances in mining technology would eventually make extraction of silver sulfides economical. After three years of experimentation he leased a claim, built a smelter, and began to make a profit. To improve the performance of this smelter in processing the Kokomo ores, Wilfley began working on a new type of concentrator, one that operated by separating minerals according to differences in their specific gravities rather than by application of heat. In ten years he had perfected the Wilfley Table, a sloping riffled surface that was agitated to separate particles in a solution of pulverized ore and water. Often installed to rework tailing dumps, the table helped to raise mineral recovery 35 to 40 percent beyond previous processes and was in use around the world by the end of the century.

Wilfley developed an ore-roasting furnace, another table to recover minerals from slimes, a centrifugal pump to transfer heavy, abrasive slurries, and, combined with his son George's mechanical insight, a pump of unique design for handling corrosive solutions. This last invention, completed in 1913, was as successful as the Wilfley Table and led to the creation of A.R. Wilfley and Sons in 1919. By 1924, Wilfley had a total of 24 patents to his name and his name is listed in *Webster's Dictionary* in conjunction with the mineral separating table he invented.



**Mining Club of the Southwest Foundation
Tucson, Arizona**

American Mining Hall of Fame 1992 Medal of Merit Recipient



Arthur A. Brant

Arthur Brant was born in Toronto in 1910 and first showed signs of a distinguished academic career upon graduation from the University of Toronto in 1932 by winning the gold medal in mathematics and physics. His post-graduate training included an M.A. at Toronto in 1933, a scholarship to Princeton and a German Exchange Fellowship at the University of Berlin, where, while earning his Ph.D (awarded in 1936), he also applied his considerable skills as a two-time intercollegiate championship hockey player when he coached the German Olympic hockey aspirants during the winter of 1934-35.

His geophysical credentials came to public attention in 1938, when, as an Assistant Professor of Physics at the University of Toronto, using a crew of his students, he traced a newly discovered high-grade hematite deposit through the ice of Steep Rock Lake using electrical methods. From these beginnings he built up a wide consulting practice. In 1947 Brant joined Newmont Mining Corporation in a program whereby Newmont sought to convert wartime marine near-shore mine detection technology into a tool for detection of mineral deposits. Brant designed and implemented a program of experimentation that eventually resulted in the successful development of the induced polarization geophysical technique, the use of which culminated in the discovery of significant mineralization at Cuajone, Peru. Under Brant's leadership at Newmont, his group's extensive theoretical and experimental work established useful applications and instrumentation for ground and aerial electromagnetic surveys and in-hole operational techniques.

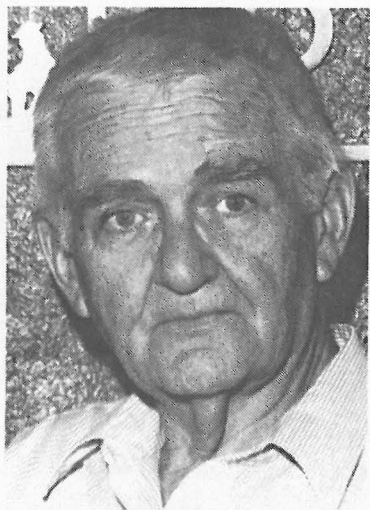
In 1976 Brant was again associated with developing technology when he served as chairman of the newly formed Geosat Committee. This committee provided the link between private enterprise, NASA and the government in the use and application of Landsat development. He subsequently served on NASA's Space Applications Board.

Throughout his professional career, Brant has continued to share his interest through 22 published professional papers, participation in 14 patents, and lectures at leading educational institutions throughout the world. The greatest tributes to Brant are those established by former students and associates in the form of the Arthur Brant lecture series at Columbia University initiated in 1985, and the Brant Chair of Geophysics at the Mackay School of Mines at the University of Nevada-Reno established in 1989.



**Mining Club of the Southwest Foundation
Tucson, Arizona**

American Mining Hall of Fame 1992 Medal of Merit Recipient



William C. Epler

William Epler, a native of Hanford, California, obtained his degree in journalism from San Jose State College. During World War II he served 3½ years with the Air Force both stateside and in Italy. Epler's early journalism career included reporting assignments with the *Wyoming State Journal* and the *Arizona Daily Sun* in Flagstaff. He moved to Bisbee in 1958 to work at the *Bisbee Gazette* and bought the paper in 1959. In 1968 he was approached by members of the Arizona Small Mine Operators Association (ASMOA) to see if he might be interested in acquiring and resuming publication of *Pay Dirt* magazine, the official publication of the organization. Epler took up the challenge and greatly expanded the coverage of the periodical eventually terminating the official connection with ASMOA but continuing and expanding the periodical's news coverage and political commentary on matters

relevant to the mining industry. *Pay Dirt* today continues to have one of the best in-depth coverage of the mining industry in the Western United States. While the bulk of *Pay Dirt's* circulation of 10,000 stays within the Western United States, a significant number of subscribers are located in other parts of the United States and overseas.

In addition to sustaining a policy of providing comprehensive news coverage of mining issues, Epler's editorials in *Pay Dirt* supporting the mining industry have been and are a reliable and eloquent source of strength for the mining industry during a time of significant change. In 1990, Epler was awarded the Ben F. Dickerson Award by the Mining and Exploration Division of the Society for Mining, Metallurgy and Exploration.



**Mining Club of the Southwest Foundation
Tucson, Arizona**

Mining Club of the Southwest

and

American Mining Hall of Fame

The Mining Club of the Southwest opened its doors on the first day of February of 1971 as a place where miners in the Tucson area could get together and discuss the trials and tribulations of their industry. Originally limited to mining engineers, metallurgists and geologists, the Club now welcomes as members those who supply services to the mining industry, or those who simply consider themselves as friends.

In the early eighties the Club established the Mining Club of the Southwest Foundation to allow tax deductible contributions to be used for charitable and educational purposes. On December 3, 1983, the American Mining Hall of Fame was inaugurated by the Foundation to honor those who have made significant contributions to the industry, to provide a forum for better understanding of the industry, and to raise funds to endow the Foundation's charitable and educational activities. The Hall of Fame honorees, both living and deceased, now number 45. The plaques which commemorate their induction are on display at the Arizona Historical Society's Museum at 949 East Second Street in Tucson.



Mining Club of the Southwest Foundation
Tucson, Arizona

American Mining Hall of Fame

1983 Recipient

George E. Atwood

1984 Recipient

Charles F. Barber

1985 Recipient

George B. Munroe

1986 Recipient

John C. Duncan

1987 Recipient

Plato Malozemoff

1988 Recipient

Simon D. Strauss

1989 Recipient

G. Robert Durham

1990 Recipient

Harry M. Conger

1991 Recipient

Kenneth J. Barr

1983-1991 Inductees

Maxie L. Anderson

1934-1983

Williams Andrews Clark

1839-1925

James Douglas

1837-1918

Charles F. Fogerty

1921-1981

Antoine M. Gaudin

1896-1974

Wesley P. Goss

1899-1985

William C. Greene

1853-1913

John C. Greenway

1872-1926

Hal W. Hardinge

1855-1943

Herbert C. Hoover

1874-1964

Daniel C. Jackling

1869-1956

Ira B. Joralemon

1884-1975

Henry Krumb

1875-1958

Waldemar Lindgren

1860-1939

Curtis H. Lindley

1850-1920

John William Mackay

1831-1901

Seeley W. Mudd

1861-1926

Charles Debrille Poston

1825-1902

Rossiter W. Raymond

1840-1918

Robert H. Richards

1844-1945

Thomas A. Rickard

1864-1953

Louis D. Ricketts

1859-1940

Reno H. Sales

1876-1969

Fred Searls, Jr.

1888-1968

Arthur F. Taggart

1884-1959

William Boyce Thompson

1869-1930

Medal of Merit Recipients

Ralph J. Roberts, 1989

John S. Livermore, 1990

Victor H. Verity, 1989

George D. Argall, Jr., 1991

