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PROFESSOR GEORGE V. CHILINGAR

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TRIBUTE TO PROFESSOR GEORGE V. CHILINGAR

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This special issue of *Carbonates and Evaporites* is dedicated to Dr. George V. Chilingar, Professor of Civil and Petroleum Engineering at the University of Southern California (USC), for his many contributions to the study of carbonate rocks, and particularly, to the field of petroleum geology engineering in carbonate reservoirs. All of us in the “carbonate community”, whether we reside in academia or in the petroleum industry, are familiar with and have been greatly influenced by his work over the years. His work in carbonate geology has spanned more than four decades, and is of world-wide scope. It is, therefore, quite fitting that we now recognize the man and his contributions to our special field of geologic interest.

George V. Chilingar started his professional career teaching in the Petroleum Engineering Department at USC in 1950, after receiving his M.S. degree in petroleum engineering there in that same year. He was Chief of the Petroleum and Chemical Laboratory at Wright-Patterson Air Force Base in Ohio from 1954 to 1956. After receiving his Ph.D. in Geology (with a minor in Petroleum Engineering) in 1956 from USC, he joined the faculty of the Petroleum Engineering Department of that university. He quickly rose to the rank of Professor, a position he holds to this day.

Since joining the faculty at USC his career as a scientist and educator has been long and distinguished, and he has held many important positions over the years in both these roles. In addition to his professorial duties, in his role as scientist he was: Senior Petroleum Engineering Advisor to the United Nations from 1967-1969 and again from 1978 to 1987; President of Electrosomatics Inc. in 1963-1966; Chief Consultant to Amjon Oil Company in 1964-1965, and consultant to the National Japan Petroleum Corporation in 1983; President of International Resource Consultants in 1967-1970; Advisor to the Governor of the State of California on energy problems in 1973; and Executive Vice-President of Global Oil Corporation from 1978 to 1981. Likewise, his role as educator and student mentor has assumed many forms: faculty advisor to the USC chapters of Sigma Phi Delta (1960 to present), Tau Beta Phi National All-Engineering Honor Society (1960 to present), and Pi Epsilon Tau National Petroleum Engineering Society (1965 to present); acting chairman of the Petroleum Engineering Department at USC (1965-1966); Director of USC League International (1970-1981); Vice-President (1971 and 1980) and President of the USC chapter of Phi Kappa Phi All-University National Honor Society in 1972 and 1981; President of the Society of Sigma Xi in 1974; Vice-President of the USC Engineering Alumni Association (1974-1976), and President of International Alumni at USC (1976-1985); member of the Board of Trustees of Daniel Murphy High School in Los Angeles (1974-1977); regional counselor of Pi Epsilon Tau (1975 to 1989); and Life Associate of Pepperdine University (since 1975). He established the H.I.M. Shahanshah Aryamehr Fellowship Program in the School of Engineering at USC in 1975, and the one million dollar Chair in Petroleum Engineering in 1976. Overseas, he has held the positions of: Honorary Dean of Students at the Tatung Institute of Technology in Taipei, Republic of China (since 1965); Honorary Advisor of the Research and Development Committee of National Cheng Kung University, Republic of China (since 1974); and External Examiner at both the School of Petroleum Engineering of the University of Ibadan, Nigeria (1974) and the Indian School of Mines in Dhanbad, India (since 1982).

*Carbonates and Evaporites*, v. 8, no. 1, 1993, p. 50-54
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With such an active schedule, the average person would have little time for scientific research and publication. But, George Chilingar is by no means your average person! In addition to sponsoring and supervising scores of students over the years (e.g., he brought 1000 students from Iran to USC in 1975!), he has had published more than 200 original research articles, 35 books, and 350 scientific reviews in the fields of carbonate sedimentology and diagenesis, and petroleum geology and engineering, just to name a few. He is perhaps best known among carbonate sedimentologists for his classic 1967 book entitled “Carbonate Rocks, Origin, Occurrence and Classification” (Volume I), and “Carbonate Rocks, Physical and Chemical Aspects” (Volume II), published by Elsevier. These books were so successful that they eventually were translated into Russian and Chinese! In addition to his still-cited and often-reprinted 1956 paper on “Relationship between Ca/Mg ratio and geologic age” and other studies of dolomites, Dr. Chilingar’s research has led to the publication of seven more books (with various co-authors) that concern diagenesis of carbonate sediments and rocks (“Diagenesis in Sediments”, 1967, also translated into Russian; a three-volume set entitled “Diagenesis in Sediments and Sedimentary Rocks”, 1979 and 1983; and “Diagenesis I”, 1988, “Diagenesis II”, 1988, and “Diagenesis III”, 1992, with two additional volumes in preparation).

Over the years, one of Professor Chilingar’s main goals as a scientist has been to bridge the longstanding gap among carbonate sedimentologists, petroleum explorationists, and reservoir engineers. He has, in fact, successfully “married” these naturally inter-related disciplines in his synergistic books, published by Elsevier, on “Oil and Gas Production from Carbonate Rocks” (1971, co-authored by R.W. Mann and H.H. Rieke), “Secondary Recovery and Carbonate Reservoirs” (1972, co-authored by G.L. Langness and J.O. Robertson), and “Oil and Gas Production from Carbonate Reservoir Rocks” (1989, co-authored by R.W. Mann and H.H. Rieke). I am particularly proud to say that, along with H.H. Rieke, Professor Chilingar and I have recently completed Part I of a two-part series that deals with integration of the sedimentologic, diagenetic, and reservoir engineering aspects of carbonate petroleum reservoirs that is soon to be published by Elsevier under the title “Carbonate Reservoir Characterization: A Geologic-Engineering Analysis”. He continues to actively strive to maintain synergistic relationships between geologists and reservoir engineers in his role as the managing editor of the Journal of Petroleum Science and Engineering, which he helped to found. In addition to these duties, he currently is on, or has been on, the editorial boards of the journals Energy Sources and Sedimentary Geology, the Petroleum Science Series published by Elsevier, and the series Contributions to Petroleum Geology and Petroleum Engineering published by Gulf Publishing Company, all of which he also had some hand in founding.

Professor Chilingar’s field of expertise is not restricted entirely to the study of carbonate rocks alone. He has, in fact, published scores of articles and books on such diverse subjects as petroleum testing technology, surface operations in petroleum production, drilling and drilling fluids, enhanced oil recovery using microbial agents and electrokinetic stimulation, petroleum maturation and migration, effects of subsidence on fluid withdrawal, oil field waters, geothermal energy, compaction of sediments, bitumens, asphalts and tar sands, clay mineralogy, paleontology, geochemistry, lacustrine sediments, metals, and many other subjects too numerous to list here. He was a pioneering researcher into, among others, the subjects of porosity and permeability estimations from thin sections; interrelationship among total porosity, effective porosity, specific surface area, irreducible fluid saturation, and permeability in sandstones as well as in carbonate rocks; the use of Ca/Mg ratio mapping techniques in oil field exploration; the use of natural organic colloids (polymers) in drilling fluids; application of direct electric current to augment reservoir energy, stabilize the borehole walls, and as a stimulation technique, and; carbonate rock classifications. His work clearly has been of multi-disciplinary extent and international scope.

His many years of professional activity are indicated by his continuing membership in and support of many honorary and professional societies: American Association of Petroleum Geologists, American Geophysical Union, American Institute of Chemists (Fellow), American Institute of Mining Engineers, Archimedes Circle, California and National Societies of Professional Engineers, Geochemical Society, Geological Society of America (Fellow), Mexican Association of Petroleum Geologists, New York Academy of Science, Phi Kappa Phi, Pi Epsilon Tau, SEPM (Society for Sedimentary Geology), Sigma Gamma Epsilon, Sigma Phi Delta, Sigma Xi, Society of Professional Engineers, Southern California Academy of Science, and Tau Beta Pi. He is recognized as an AAPG Certified Petroleum Geologist, Certified Professional Chemist, and Registered Geologist in the State of California. For his scientific contributions and community service, his name is listed repeatedly in the “Who’s Who” of: “American Men of Science”, “Creative and Successful Personalities”, “Distinguished Personalities of the World”, “Engineers of Distinction", “In America” (43rd edition), “International Bibliography”, “In Frontier Science and Technology” (1st edition), “In the West”, “Leaders in American Science”, “Leading Men in the United States”, “Men of Achievement”, “National Register of Prominent Americans and International Notables”, “Outstanding Personalities in the West and Midwest", and the “Royal Blue Book”. As a noted authority on hydrocarbon reservoirs he has lectured around the world, in such places as Japan, China, Taiwan, Thailand, India, Iran, Central America, the Soviet Union, Europe, Canada, South America, and the United States.
Professor Chilingar has been honored repeatedly, both in the United States and abroad, by a great number of awards in recognition of his scientific achievements, service to education, and contributions to international relations. He has received Doctor Honoris Causa degrees from the Academia Studiorum Minerva in Italy, Kennsington University in California, Pacific Western University in California, and Bedford University in Arizona. He has even been awarded the Doctor of Laws Honoris Causa degree from Pacific States University. A full listing of his other awards is far too lengthy to reproduce here. A few key honors that have been bestowed on him include: Diploma d’Onore from the Instituto Napolitano di Cultura, Distinguished Faculty Award at USC, Distinguished Achievement Award from the Society of Petroleum Engineers, the Dart Associates Award for Teaching Excellence, Pro Mundi Beneficio Award from the Brazilian Academy of Humanities, Gold Medal of Honor from the Government of Iran, the Alborz Prize of Iran, Taiwan Medal of Honor, Chinese Medal of Honor, Meritorious Award and Royal Pouch Medal of Thailand, and others. He truly is a person of international regard!

In addition to this partial list of his professional activities (as if that wasn’t enough!), Professor Chilingar has served his country with honor since 1950 in various roles in the U.S. Air Force. For his longstanding service, he has been recognized by: being named U.S. Air Force Cadet of the Year in 1951, and Distinguished Military Student in 1952; receiving the Air Force Association Award for Military Achievement in 1953; the Distinguished Service Award for Outstanding Instructor in 1972; in 1981 he received the Air Force Commendation Medal, Distinguished Service Award for Outstanding Contributions to Air Force ROTC Programs, the Air Force University Plaque, and was recognized as Top Liaison Officer (Top Performer); he received the USAF Distinguished Service Award in 1982, 1983, 1984, and 1985; in 1985 he received the Air Force Association Special Defense Service Award, the Minority Recruiting Award, and the Meritorious Service Medal (twice). Dr. Chilingar has also assisted the Chinese government over the years, and for his efforts he has received his Master Parachute Wings in 1981 and an Award from Artillery Training Command in 1983. In addition, he has been active in national and international law enforcement agencies for many years. In fact, he was even commended for his contribution to law enforcement during the 1984 Olympic Games.

I was first introduced to George Chilingar the scientist in the late 1960’s while (admittedly, only briefly) perusing through his 1967 books on carbonate rocks. These books resurfaced again, in 1971, while I was enrolled in a graduate course in carbonate sediments and rocks under Gerald M. Friedman at Rensselaer Polytechnic Institute. At that time, however, I did not merely peruse these books, but rather, read them from cover to cover as per Dr. Friedman’s reading assignment for that particular week. My association with Dr. Chilingar, in his role as a student of carbonate rocks and prolific author on the subject, began then and continues to this day. I had the pleasure of meeting George the man in 1986, when he arranged for us to lecture on petroleum geology at the Oil and Natural Gas Commission in Baroda, India. My first impression upon meeting him was that he was exceptionally cordial and generous, an impression that, because of my rather distrustful nature (due to my upbringing in Brooklyn!), instantly made me suspect his motives. I have since come to realize that George is exactly what he seems to be: very honest, friendly, sincere, generous, and helpful. Yes, he does have his motives: from his friends, he demands all these qualities in return, and asks that we join together to further the study of carbonate rocks. Nothing else. It is my pleasure to know this exceptional human being.

George Chilingar has proven himself to be an exceptional scientist, dedicated teacher, civic-minded individual, and international ambassador (e.g., he currently is Honorary Consul of Honduras in Los Angeles). His long and distinguished career devoted to the study of carbonate rocks has given him a well-deserved, international reputation. I take particular pride, on behalf of the world’s carbonate sedimentologist and petroleum geological communities, in preparing this dedication in this special issue of Carbonates and Evaporites to Professor George V. Chilingar, scientist and friend.

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Received: August 1, 1992
Accepted: November 1, 1992