

# Memorial to Gabriel Dengo

## 1922–1999

JOHN JAMES PRUCHA

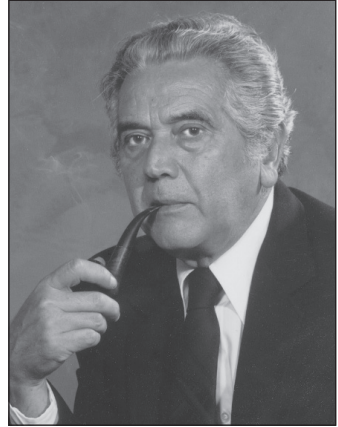
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Gabriel Dengo, acknowledged dean of Central American geologists, died in Guatemala City on August 4, 1999. He was born March 9, 1922, in the province of Heredia, Costa Rica. His father, Omar Dengo, was a distinguished writer, poet, and teacher and was recognized as the foremost educator in Costa Rica. Gabriel's mother, Maria Teresa Obregón, was modern Costa Rica's first elected congresswoman.

Gabriel's formal education began at the University of Costa Rica, which his father helped to establish. There he received a baccalaureate degree in agriculture in 1944. That year he received a scholarship from the Rockefeller Foundation to pursue graduate study in geology at the University of Wyoming. In the fall, he made the long trip from San José to Laramie. He arrived at the University of Wyoming totally exhausted, with limited facility in English, and—by his own admission—“scared to death!” With his usual resilience and optimism, he soon distinguished himself as an outstanding student and was inducted into the Phi Beta Kappa honor society. At Wyoming, he earned B.A. (1945) and M.A. (1946) degrees in geology. His Master's thesis was the basis for his first publication: “Geology of bentonite deposits near Casper, Natrona County, Wyoming.”



He was offered a number of opportunities for doctoral studies at outstanding universities; he chose Princeton. There he was supported by a prestigious Proctor Fellowship and studied principally under Harry H. Hess, Arthur F. Buddington, and Edward Sampson. He was awarded the Ph.D. in 1949.

It is not possible to categorize simply Gabriel Dengo's geologic expertise. He was a well-grounded generalist who made significant contributions in igneous and metamorphic petrology, structure and tectonics, stratigraphy, economic mineral deposits, geologic history, geophysics, and regional mapping and synthesis. Underlying all of his work was a strong commitment to field studies. In lieu of significant trained staff and support specialists in many of his professional venues, Gabriel had to develop high proficiency in the use of the research tools needed to undergird his field studies. He met his need for reference materials and scientific journals by building and maintaining an extensive professional library of his own.

Gabriel's doctoral studies in the Venezuela Coast Ranges were an early contribution to Princeton's Caribbean research program, which prospered under Harry Hess's direction. For six months in 1950 Gabriel worked full-time at Princeton as a research associate in the program.

In 1950, he returned to Venezuela and served for two years as Senior Geologist in the Ministry of Mines and Hydrocarbons. In that capacity, he played a major role in the discovery of a large iron ore deposit in the Guyana Shield.

One of Gabriel's first jobs was consultation on the construction of the Caracas-Maiquetia highway. He had mapped the Venezuelan Coast Ranges through which the highway passed. During construction of the first tunnel, Gabriel told the engineers that they would eventually reach serpentine and that without shoring, the tunnel would probably collapse. The serpentine was reached where he predicted, and he was praised as a great geologist. But the engineers took no special precautions, and the tunnel collapsed. Now they called Gabriel "the greatest geologist in Venezuela" because of the accuracy of his predictions. They tunneled on and Gabriel told them they would intersect another serpentine body. Again the engineers reached the serpentine, and again the tunnel collapsed. Now Gabriel was not only the greatest geologist in Venezuela, he was "the greatest geologist in the world." But, as Gabriel, with his wry humor, observed years later, "They never did pay any attention to me!"

From 1952 to 1955, Gabriel worked in Costa Rica as a field geologist and supervisor for the Union Oil Company of California. From 1956 to 1962, he was exploration manager in Guatemala. For eight months in 1962 the company assigned him to New Orleans to work on sub-surface problems.

Gabriel returned to Guatemala in 1963 as a consultant for the Organization of American States and was assigned to the Permanent Secretariat of the Central American Economic Integration Treaty (SIECA) as advisor on natural resources. Subsequently, he was appointed Deputy Secretary General.

From 1965 until October 1969, Gabriel served as chief of the Geology and Mining Division of the Instituto Centroamericano de Investigación y Tecnología Industrial (ICAITI), Guatemala. From October 1969 to April 1975, he served as General Deputy Director, and from June 1975 through April 1979, as Director. Throughout those years, Guatemala experienced severe political upheaval and revolutionary ferment. It is to Gabriel's credit that he was able to continue productive research and administrative work without being drawn into the political turmoil. He worked with the economic ministers of five Central American countries without getting caught up in national political agendas.

Gabriel recognized that field work had its own special vicissitudes. On one occasion, while doing volcanological reconnaissance in southeastern Guatemala, he and Howel Williams, Alexander McBirney, and Samuel Bonis stopped for lunch in the hamlet of Agua Blanca. Guatemala was at that time in some minor civic turmoil, and over-zealous local authorities arrested the four men for "suspected espionage." Williams and McBirney were cited for not carrying their passports. Gabriel's papers were in order, but he was arrested for driving the jeep carrying undocumented strangers, and Bonis was detained for associating with such unsavory characters. The four men were jailed as suspects. The next morning they were released, but not before Gabriel had turned adversity to triumph by founding the exclusive and prestigious "Sociedad Filosófica de Agua Blanca" to serve the intellectual needs of the four charter members!

Gabriel Dengo's professional activities are too numerous to catalog here. His contributions include editorial service for GSA, AAPG, the Venezuelan Association for the Advancement of Science, and ICAITI. For GSA, he served as councilor from 1970 to 1973 and as a member of the Centennial Committee. He was also an Honorary Fellow of the Society. He was on the committee for the Metallogenic Map of North America and was also senior author. For the first five meetings of the Conference of Central American Geologists, 1965–1977, Gabriel served as technical secretary. He also edited the DNAG volume on the Caribbean region for GSA.

In addition to the Geological Society of America, Gabriel belonged to the Mineralogical Society of America, the American Association of Petroleum Geologists, Geologische Vereinigung, Colegio de Geólogos de Costa Rica, Sociedad Geológica Mexicana, Society of Economic Geologists, Asociación Iberoamericana de Editores de Geociencias, and Explorers Club (Fellow). He was a founding member of Sociedad Geológica de Guatemala.

Among the many honors and awards he received are AAPG's Michael T. Halbouty Human Needs Award (1995), the Distinguished Services Medal of the Circum-Pacific Council for Energy and Mineral Resources, and Southern Methodist University's Hollis D. Hedberg Award in Energy. The Sociedad Geológica de Guatemala has established the annual Gabriel Dengo Award for Excellence in Earth Sciences, and in 2000 the AAPG executive committee created the Gabriel Dengo Memorial Award to be given to the author of the best paper presented at the annual AAPG International Convention.

Both Gabriel and his wife of 49 years, Norma Rodriguez, were from Costa Rica but became citizens of Guatemala and established their permanent home in Guatemala City. There they raised three sons, Juan Gabriel, Carlos Arturo, and Alejandro. Norma is professor of philosophy at Universidad Francisco Marroquín in Guatemala City.

The Dengo home was noted for its gracious hospitality. For many students, the Dengo home provided a field base for short periods of time. There Gabriel pursued his hobby of growing exotic orchids collected on field trips to remote areas, and there he developed a strong interest in archeology and a deep appreciation for pre-Columbian artifacts of Central America.

Gabriel was gifted with a great sense of humor, which he often shared from his extensive repertoire of jokes. He was held in great respect by colleagues, friends, and students, for whom he had much affection. He was a gracious person who understood his great intellectual capacity, but he never lost his innate sense of humility.

Gabriel chose not to accept permanent appointments on the faculties of those universities which courted him, though from time to time he did accept invitations to visiting-professor positions for short periods. He was an effective and generous teacher who mentored many young geologists working in Central America and the Caribbean region.

He was the author or co-author of more than 60 scientific papers. In addition, he wrote many in-house technical reports for the companies and government agencies for which he worked. The body of literature, including maps, he produced provides a good starting point for present-day students of Central American and Caribbean geology. His final paper, "El Medio Físico de Guatemala," was published posthumously as the first chapter of *Historia General de Guatemala*.

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Carlos A. Dengo provided information on Gabriel's personal background, as well as a comprehensive bibliography and curriculum vitae. Anecdotal narratives were contributed by Thomas W. Donnelly, Samuel Bonis, and Gregorio Escalante.

### SELECTED BIBLIOGRAPHY OF GABRIEL DENGO

- 1946 Geology of bentonite deposits near Casper, Natrona Country, Wyoming: Wyoming Geological Survey Bulletin, no. 37.
- 1950 Eclogitic and glaucophane amphibolites in Venezuela: American Geophysical Union Transactions, v. 31, p. 873–878.
- 1951 Geology of the Caracas Area: Geological Society of America Bulletin, v. 64, p. 7–40. (with Hess, H.H. and Smith, R.J.) Antigorite from the vicinity of Caracas, Venezuela: American Mineralogist, v. 37, p. 68–75.
- 1962 Tectonic igneous Sequence in Costa Rica, in Engel, A.E.J., James, H.L. and Leonard, B.F., eds. Petrologic studies: Geological Society of America, Buddington Volume, p. 133–161.
- 1964 (with Williams, H, and McBirney, A.R.) Geological reconnaissance of southeastern Guatemala: University of California, Publications in Geological Sciences, 127 p.
- 1967 Geological structure of Central America: University of Miami Conference on Tropical Oceanography Proceedings, Studies in Tropical Oceanography, no. 5 p. 56–73.

- 1969 (and Bohnenberger, O.) Structural development of Northern Central America: American Association of Petroleum Geologists Memoir II.
- Relación de las serpentinitas con la tectónica de América Central: Pan American Symposium on the Upper Mantle, México, p. 23–28.
- Problems of tectonic relations between Central America and the Caribbean: Gulf Coast Association of Geological Societies, v. XIX, p. 311–320.
- 1970 (and Bohnenberger, O. and Bonis, S.) Tectonics and volcanism along the Pacific marginal zone of Central America: *Geologische Rundschau*, v. 69, no. 3, p. 1215–1232.
- (and Bonis, S. and Bohnenberger, O.) Mapa geológico de Guatemala, a escala 1:500,000: Instituto Geográfico Nacional, Guatemala.
- A review of Caribbean serpentinites and their tectonic implications: *The Geological Society of America Memoir* 132, p. 301–312.
- 1975 Paleozoic and Mesozoic tectonic belts in México and Central America *in* The Ocean Basins and Margins, v. 3, Nairn, A.E.M. and Stehli, F.G., editors: New York, Plenum Press, p. 283–323.
- 1981 (with Guild, P.W., McCartney, W.D., Leech, G.B., Ellitsgaard-Ramusen, K., Salas, G.P. and González Reyna, J.) Metallogenic map of North America, scale 1:5,000,000: U.S. Geological Survey.
- 1985 Mid America: Tectonic setting for the Pacific margin from southern Mexico to northwest Colombia, in Nairn, A.E.M., Stehli, F.G. and Uyeda, S., eds., *The Ocean Basins and Margins*, v. 7A, *The Pacific Ocean*: New York, Plenum Press, p. 123–180.
- 1990 (with Case, J.E.), eds., *The Caribbean Region*, *in* Palmer, A.R., ed., *The Geology of North America*: Boulder, Colorado, Geological Society of America DNAG Publication, v. H, 528 p., 14 plates..
- (with G. Draper) History of geological investigation in the Caribbean Region, *in* the *Geology of North America*: Boulder, Colorado, Geological Society of America DNAG Publication v. H, p. 1–14.
- 1999 El medio físico de Guatemala, Asociación de Amigos del País, Fundación para la Cultura y el Desarrollo, *in* Rojas-Lima, F., ed., *Historia General de Guatemala*; Guatemala, v. 1, p. 51–86.

