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Memorial of Maharajapuram Sitaram Krishnan
August 24, 1898—April 24, 1970

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Dr. Maharajapuram Sitaram Krishnan, the first Indian Director General of the Geological Survey of India and a distinguished fellow of the Mineralogical Society of America, died on the 24th of April, 1970, at Tanjore, after a brief illness. Dr. Krishnan's death has created a void in the geological world; he belonged to the diminishing group of geologists with a profound knowledge of the entire spectrum of geological science.

Dr. Krishnan was born on the 24th of August, 1898, in the Tanjore district of Madras in a poor Brahmin family of scholars. At the early age of four, young Krishnan lost his father and was brought up by his mother and elder brother. After schooling in Tanjore where he showed high promise of ability, he completed his undergraduate studies with distinction at the St. Joseph's College, Tiruchirapalli. Thereafter he joined the Presidency College, Madras, taking his B.A. (Hons) degree with high distinction in Geology in the year 1919. After graduation he worked for a while as a demonstrator in geology at the Presidency College and also engaged in geological field work in Central India.

In 1921, Krishnan proceeded to the United Kingdom on a scholarship and joined the Imperial College of Science and Technology (Royal College of Science, London). The very next year he received the A.R.C.S., obtaining a first class, and qualified for the diploma of the Imperial College of Science in the following year. His studies on the volcanic rocks from Western India under the guidance of Professor W. W. Watts earned him the Ph.D. degree in 1924. This study on the petrography and chemistry of Deccan basalt differentiates from the Girnar and Osham hills in Gujarat, published in 1926, remains a classic. Dr. Krishnan was selected by a Board in England for appointment as a Geologist in the Geological Survey of India, he being the first with a doctorate degree to join as Geologist.

After joining the Geological Survey of India, Dr. Krishnan was assigned geological surveys and mapping of a difficult terrain in Eastern India. Nine years of intensive field studies coupled with petrographic studies resulted in the monumental memoir on the geology of Gangpur State. During this period, he published several brief papers on mineralogy, petrography and mineral deposits in the Records of the Geological Survey of India and in the journals of the Mining, Geological and Metallurgical Institute of India and the Mining, Metallurgical and Geological Society of India. Earlier, Dr. Krishnan, while in London, had studied the optically anomalous cordierites of Southern India and published a paper in the *Mineralogical Magazine* as early as 1923. This was followed in India by his studies on the giant pleochroic halos in cordierites of peninsular India. Studies on such pleochroic halos have now assumed considerable importance and there have been many

requests for the specimens described by Dr. Krishnan. In 1935, Dr. Krishnan presided over the Geology Section of the Indian Science Congress and his presidential address on problems of sedimentation in pre-Cambrian rocks of Eastern India represents a pioneering effort in this field. In 1936, Dr. Krishnan spent a year out of India partly in the United Kingdom and partly in the U.S.A. and Canada cultivating friends at Columbia, Harvard, Princeton and Wisconsin Universities and at Washington, Ottawa, Toronto, Montreal, *etc.* While in London, he took a formal course at the Imperial College in Exploration Geophysics and later spent about two weeks at Innsbruck with Professor Sander acquainting himself with petrofabric techniques. He spent some time at Harvard and Wisconsin Universities familiarizing himself with modern mineralogical techniques including the use of the five-axes Universal Stage. Dr. Krishnan made many more visits to the U.K., U.S.A., and Canada, the last visits being for the I.U.G.G. session in 1963 at Berkeley and the G.S.A. meeting at Houston in 1965.

On his return to India in 1937, Dr. Krishnan served as a member of the Coal Committee appointed by the then British Government and displayed great courage and patriotism by a dissenting note recommending the nationalization of the coal industry. This, however, was a minority view and was not implemented by the then Government of India. It would be of interest to know that the Government of India promulgated an ordinance nationalizing mines producing metallurgical coal with caking properties a few months back. This in itself is a tribute to the vision and far sightedness of Dr. Krishnan.

Dr. Krishnan was later placed in charge of a field party and organized field work in Southern India. Besides writing many bulletins on mineral resource problems, he found time to write the classic treatise on the Geology of India and Burma which has gone into five editions so far. He became the Director of the Indian Bureau of Mines in 1948, acted as Director of the Geological Survey of India for a brief period in 1949 and became the first Indian Director (now designated as Director General) in 1951, which post he held with distinction for several years before becoming the Geological adviser to the Government of India. While Director of the Geological Survey of India, Dr. Krishnan produced his famous monograph on the tectonic and structural history of India and authoritative accounts of the iron ores of India and Asia. After his retirement from service the Indian Council of Scientific and Industrial Research invited him to organize the National Geophysical Research Institute, which is now functioning at Hyderabad. After retiring from government, Dr. Krishnan held the Chair of Geology and Geophysics in the Universities of Andhra and Osmania. Dr. Krishnan continued his scholarly pursuits to the very end, and his last paper on the iron ores of India was read posthumously at the Kiev Symposium on Sedimentary Ores in August 1970. He has left an impressive list of contributions hard to emulate.

Dr. Krishnan was the president of almost all the National Societies connected with earth sciences in particular and science in general. He was fellow or member of most of the International Societies in the field of earth sciences; his association with the Mineralogical Society of America dates back to the early thirties. He was the General President of the Indian Science Congress in 1957. Many honors came to him but he wore them lightly. He received the P. N. Bose medal of the Asiatic Society for outstanding contributions to Geology, was elected Commonwealth and Foreign Fellow of the Geological Society of London and honored by the Government of India with "Padma Bhushan"—a title conferred upon distinguished citizens in recognition of outstanding service.

Dr. Krishnan had a powerful personality, an incisive mind and a remarkable ability to express himself with brevity and clarity. In March-July 1969, Dr. Krishnan lectured at many centers of learning in New Zealand and Australia as Commonwealth Foundation distinguished lecturer and left a deep impression every where by his vast scholarship and ability to speak with authority and understanding. This writer, who visited Australia subsequently, was privileged to hear from many Australian geologists words of admiration and praise for Dr. Krishnan's profound scholarship.

His scholarly pursuits went far beyond the earth sciences; he was fond of French and English classical literature, the ancient Vedas and Upanishads, classical European and Indian music, dance and drama. During his life time he built upon an enormous collection of books and journals on earth sciences, besides works on literature, art, history and social sciences. He was also a keen student of astrology and astronomy. He was extremely generous to his associates, especially his subordinates, and helped them liberally. He had a soft corner for students and research workers and many geologists in India owe

their careers to him. Dr. Krishnan was deeply religious. He combined in himself the qualities of a scientist with the austerity of a savant.

Dr. Krishnan married while at college and his spouse predeceased him in 1965. He lost his only son aged 17 in 1946—a tragedy which left a permanent scar. He leaves behind three daughters, the eldest of whom is married to the writer.

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Memorial of Purama Rangashayee Jagapathi Naidu

October 3, 1903—February 22, 1970

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Professor P. R. J. Naidu, retired Professor of Geology, Founder-President of the Mineralogical Society of India, and an eminent geologist, passed away peacefully in the early hours of February 22, 1970, at Mysore, South India, leaving behind his wife and a vast number of students and friends. He will be remembered by his many professional colleagues and friends both in India and abroad as a man of great skill and intelligence in teaching, research and organization. His personal magnetism, ready wit, interesting conversation and criticism are sorely missed.

Purama Rangashayee Jagapathi Naidu was born on the third of October, 1903, in Tiruchinapalli, Madras State. He received his early education in Wesley Mission High School, Bangalore, from where he passed his Matriculation examination in I Class in 1918 and had the distinction of being nominated as the best student of the year. For his higher education he joined the Maharaja's College, Mysore, and subsequently the Central College, Bangalore. He graduated in the year 1923 with Botany, Literature and Law as optional subjects. It appears that he had a special aptitude to study Physics, but somehow circumstances favored his study of Geology, which he did with all earnestness and devotion.

This was the time when Mahatma Gandhi had started the Freedom Movement in India. Many students in Bangalore joined this National Movement, responding to the call of the leader. Naidu also plunged into the movement and emerged as a leader of the students, being himself both a good debater and a fluent speaker in English. Even as a student, he was known for his indomitable fighting spirit, never caring for the consequences. His contemporaries and classmates were the political leaders S. Nijalingappa and K. C. Reddy, who later became the Chief Ministers of the Mysore State. During this movement, he underwent imprisonment for some time along with these leaders.

In 1929, he joined the Banaras Hindu University for his post-graduate studies in Geology, as a student of Professor K. K. Mathur, a geologist well-known at that time. Even in Banaras, he could not keep away from active participation in the student movement and joined the non-cooperation movement led by Pandit Madan Mohan Malaviya. These activities, however, never came in the way of his studies. He had the distinction of passing the M.Sc. in First Class, securing First rank.

In 1932, he was appointed a Demonstrator in Geology in Central College, Bangalore, and within a short period was promoted to Lecturer. A very popular teacher he was. Naidu never entered any class without adequate preparation. His memory was very sharp. He was capable of condensing any written matter without sacrificing its actual value. One could expect a masterly treatment of any subject he handled. He had a thorough command over the language and the subject and could speak in a pleasing and convincing style.

In 1940, he was promoted to Assistant Professor of Geology in Central College, Bangalore. Besides teaching, he was deeply interested in research and