

(NCST) sub-committees (1971-1973), Expert Panel on Geology and Geophysics of UGC (1976-1979) and a member of the INQUA Indian and Pacific Ocean Sub-committee on Quaternary Shorelines.

Prof. Poornachandra Rao was also life Fellow of the Geological Society of India, Bangalore and the Geological, Mining and Metallurgical Society of India, Kolkata. He was a governing council member of the Indian Association of Sedimentologists. Prof. Rao was also a Fellow of the

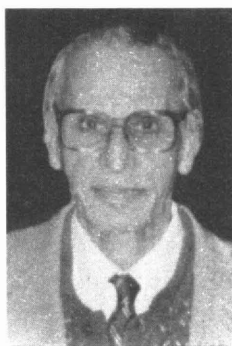
American Association of Petroleum Geologists.

As an individual, Prof. Poornachandra Rao was simple, unassuming and generous. With his passing away, the country has lost an eminent marine geologist who was also a great human being.

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Lakshminarayanapuram Narayanan Kailasam
(1921-2005)

He was one of the tallest of earth scientists. An institution by himself and chosen as it were to fulfill a momentous role in the growth and flowering of geophysics in India right from its formative years. Sharp of intellect, articulate, inspiring, endowed richly with wit and repartee and yet simple, intensely human and forgiving, — these, in short, were some of his striking qualities.

In a frustrating ambience of petty prejudices overriding all other concerns of real consequence, he stood defiant and alone in the cause and defence of his larger convictions. If he had to pay a heavy price for it, so he did with utter nonchalance. Behind a façade of flippancy and frivolity, there was a consuming fire of fierce commitment to geophysics. Indeed he had a great vision for geosciences as a whole, the realization of which was systematically thwarted by myopic mindsets.

Serving in the Geophysics Division of GSI right from its inception in 1945/'46, he carried out a wide range of investigations on almost all of which he left an indelible stamp of his genius. Mapping complex lithologic changes in the bedrock underlying Narmada alluvium was one of the early challenges. Another contemporaneous one related to delineation of brine rich pockets near Bharatpur and potable water zones in Purna valley. In those incipient years of evolving geophysical methodologies, these were rightly

acclaimed as original and pioneering successes that set the pattern for subsequent surveys of similar kind.

After his return from the University of St. Louis, USA, he focussed his attention on the sedimentary basins of Cambay in Gujarat and Cauvery in coastal Tamil Nadu. In electing these basins on priority for oil exploration, he displayed an uncanny insight as neither of these was really rated so high by the petroleum geologists at that time. Conducting the first ever seismic reflection survey in Cambay basin, he proved an aggregate thickness of 2300 m for the marine rocks and the overlying alluvium thus belying the earlier suggestions of a shallow basin. The Lunej structure identified by this survey struck onshore oil for the first time (outside of Assam) eventually opening up a highly productive oilfield that extended into Gulf of Cambay and also into the offshore areas of Bombay coast typified by the now famous 'Bombay High'.

In the Cauvery basin too he proved more than 3300 m of marine sediments besides delineating significant structural features. Subsequent drilling of these by ONGC has confirmed oil especially in the Karaikal region.

Far ahead of anyone, he realized the importance of embarking on regional geophysical coverage of some of the hard rock areas also, as distinguished from sedimentary basins which had been, in any case, attracting such surveys

all over the world for fossil fuels. Most appropriately, one of his first concerns was the enigmatic Deccan trap that totally eclipses the underlying geology over a vast stretch of about 400,000 sq km. Gravity surveys selectively supported by seismic and electrical soundings virtually laid bare the infra-trappen tectonics and potential areas for coal and hydrocarbon exploration.

Also, he was involved in extensive geodynamic studies connected with the evolution of some of the intra-cratonic basins, subsidence characteristics of sedimentary basins on the continental margin off the east coast of peninsular India, plateau uplift in the Deccan, Karnataka and NE India, recent vertical movements in various parts of the country and intra-plate seismicity in Maharashtra. These studies were largely carried out as part of certain successive international programmes (International Upper Mantle, International Geodynamics and International Lithosphere) sponsored by the ICSU and its affiliates.

His long tenure of over two decades (1957-1979) as Chief Geophysicist, GSI, marks the high noon of development with rapid expansion of geophysical activity and its modernization. The Division as a whole grew in stature as an efficient and well organised body with enhanced field capabilities backed by a R & D laboratory for model studies, investigation of rock properties and fabrication of instruments. Mineral exploration was directed at a wide range of economic targets leading to significant discoveries. There were also several successful groundwater and civil engineering investigations. At the same time, subsurface mapping expanded in scale and scope and acquired a new urgency and relevance in the larger context of regional geology. His inspection visits to field camps were always exciting and educative experiences to his officers. His instant grasp of the field problems was remarkable and his guidance equally so.

At the National level he served on the Central Board of Geophysics (1957-1962) eventually paving the way for the creation of NGRI and NIO under the umbrella of CSIR. He authored numerous publications in Indian and International journals of repute besides participating in several geoscientific committees and conferences both within the country and outside. Among the various International Conferences, we may mention the UNESCO Seminar on Mineral Exploration in Moscow (1967), Symposium on Recent Crustal Movements, Zurich (1974), Assembly of the International Union of Geodesy and Geophysics, France (1975), Symposium on Sedimentary Basins of Continental Margins and Cratons, England (1976), International Geological Congress, Sydney (1976), Symposium on Late Cenozoic Isostatic Movements, Stockholm (1977) and

Plateau Uplift Conference, Arizona (1978). He was the first Exploration Geophysicist to be elected as a Fellow of the National Academy of Sciences. He was a Fellow of the Geological Society of India, Fellow of the Indian Geophysical Union and also a member of the Society of Exploration Geophysicists (USA) and the Indian Society of Earth Sciences and other professional bodies. He was a recipient of several coveted awards as well.

Although he left India after superannuation to settle with his brilliant children in US, he continued to participate actively in the annual conventions of the SEG there. He was often seen to be poring over technical literature at home for hours on end while also enjoying general reading.

Looking back over the years, it was a dedicated career with one unbroken chain of outstanding achievements. Posterity will remember him as a pioneer, as the forerunner of some major oil discoveries in the country, as the initiator of crustal studies through systematic regional surveys, as one who added very substantially to our knowledge of the subsurface of the Indian subcontinent and its geodynamic activity, as also one who headed and guided the Geophysics Division, GSI, with unrivalled distinction.

He travelled a long way in life outshining even his father, Dr. L.A.N. Iyer, who was himself a distinguished geologist. Born in Palakkad (Jan 15, 1921) and educated in St. Xavier College, Kolkata, he was a student of Physics under Prof. Meghnath Saha. He was to have later carried on research under Prof K.S. Krishnan but was destined instead to join GSI and proceed to St. Louis, USA, to take a Master's in Geophysics under Prof. Macelwane.

In return for all that he gave in such abundance, the Establishment he served so loyally till the very end gave him little. It is one of those cruel ironies that often befall men of courage and conviction. And yet he bore no grudge, no bitterness, no rancour. On the other hand, he often admitted in private his indebtedness to GSI for the opportunities it provided him to do his bit! This was indeed magnanimity, rare and at its generous best!

His charming wife, Smt. Lalitha Kailasam, was a tower of strength through the trying vicissitudes of his life until she departed two years ago. With his beloved sons by the bedside in Silver Spring, Maryland, US, he quietly faded into history on 20 January, 2005 after a fulfilling life of 84 years. He leaves behind an extended family of scores of geoscientists and admirers. A legend is no more and it is difficult to come to terms with a yawning void such as it is.

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