

## OBITUARY



**Y.N. Rama Rao**  
(1917-2015)

Yedathore Nanjundiah Rama Rao, one of the founder members of the Geological Society of India and who served the Mysore Geology Department (MGD from 1942-1950) and the Atomic Minerals Directorate (AMD from 1950-1977) passed away peacefully due to old age (98+ years) at Gavipuram on the 8<sup>th</sup> April, 2015. Rama Rao was born at Gavipuram on 30<sup>th</sup> January 1917 and had his early education in Bengaluru and obtained his BSc (Hon.) in 1940 and MSc in Geology in 1942 from the Central College, Bangalore. Besides a very diligent student, Rama Rao was a keen foot-ball player and was member of the Bangalore Football club. He joined the MGD in February 1942. Rama Rao and B.P. Radhakrishna, together served in the MGD, the oldest State departments of geology in India (presently known as the Department of Mines and Geology (DMG)).

Soon after independence, the Atomic Energy Commission (AEC) was created in 1949 under the ministry of NRSR guided by Dr. Homi Bhaba and the foremost requirement was to seek indigenous sources of atomic minerals. As a first step, a request was sent by Dr. D.N. Wadia, Geological Advisor to NRSR, to Geology Departments in the States, like MGD, as also few universities such as Calcutta, Madras, Benaras, Bombay, Andhra, Indian School of Mines, Dhanbad and others that had geology in their graduate programme to forward names of geologists who could be considered for supervisory roles and also fresh graduates for positions in the AEC. Rama Rao represents one such original gazette officers (OGOs) whose services were lent from MGD to AEC. He joined the Rare Mineral Survey Unit (RMSU) of AEC, popularly known as the 'Shamiana batch' on 3<sup>rd</sup> October, 1950, at No.10, King George Avenue, the official residence of Dr. Wadia along with 50 others. RMSU became the Raw Materials Division (RMD) in 1953 and later christened as Atomic Minerals Division (AMD) in 1958 and subsequently in its Goden Jubilee year in 1998 as the Atomic Minerals Directorate for Exploration and Research but still retaining the more familiar acronym AMD so well entrenched in the DAE and other geological fraternity. In 1965, on Dr. Wadia's suggestion, Dr. Bhaba ordered that Rama Rao be absorbed permanently in the AMD and thus he became the first confirmed officer in AMD.

Joining in the supervisory cadre Rama Rao had the opportunity

to closely interact with Dr. D.N. Wadia, Dr. P.K. Ghosh, Dr. Bhaba and Vikram Sarabai more closely during the period 1950-1970. Under Dr. Wadia and K.L. Bhola, he began his work in Rajasthan and Bihar where he was fully involved in the discovery, proving and production of columbite-tantalite, beryl and lithium ores besides pegmatitic uranium in the famous mica belts of India namely Bihar, Rajasthan and Andhra Pradesh and the lesser known pegmatite fields in Karnataka and Tamil Nadu. He was also, at the instance of Dr. Bhaba and Dr. Gosh, during the late 1950s and early 1960s and later with Dr. Sarabai, involved in planning the restructuring of AMD on par with other units of DAE.

Rama Rao's memory was so sharp that even as a non-generaion, he used to recall vividly, his interactions with Dr. Bhaba, Dr. Wadia and Dr. P.K. Gosh, even with actual quotes especially during the formative years of AMD's southern regional office at Bangalore. His own residence at Gavipuram was AMD's part-time office, during 1954-55, prior to the formal shifting of AMD's office to Patan Bhavan, Race Course road on October 1, 1956.

Rama Rao would also recall the many occasions that he had seen Dr. Bhaba during his visits to Bangalore during the 1940s when he would come to visit Prof. B.S. Madhava Rao of the Mathematics Department in Central College. Dr. Bhaba, during his visits to Patan Bhavan would enjoy the scenic beauty of the Bangalore city especially the view from the top of Patan Bhavan with the clock tower of the IISc (popularly known as the Tata Institute) in the north and the Central college complex in the south. He would also recall as to how Bhaba liked the soapstone statue of Lord Krishna of Hoyasala period found at the Patan Bhavan premises and how he procured it from the owner B.V. Patankar and send it to Dr. Bhaba, who had paid for all the freight and other charges through a cheque which he received when he was visiting US during a training programme. Such were the nostalgic recollections whenever I used to meet him. Rama Rao was a rare 'palaeo-time-capsule', chronicling AMD's formative years besides other interesting accounts. One such occasion was Dr. Bhaba's introduction to Dr. P.G.H. Boswell, Secretary, Royal Society and author of the famous book on 'Sedimentary petrography' at Bangalore when he had come for the Diamond Jubilee celebrations of the IISc. Boswell also suggested to him the possibility of finding

uranium in the Precambrian sedimentary basins such as the Cuddapah and other Purana basins.

Rama Rao would also fondly recall early hiccups in the starting of Jaduguda mine in 1958. Dr. Gosh and Dr. Bhaba were in Bangalore to discuss the progress of leaching results of Jaduguda ore. In the breakfast meeting Dr. Bhaba had been given an adverse report on the poor leachability of Singhbhum uranium ores including Jaduguda by some metallurgist. Dr. Bhaba had asked Dr. Gosh to submit a report on that by noon as how to go about. Dr. Gosh was quite upset and asked Rama Rao as to the possible way out. Rama Rao had suggested the seeking of a second opinion from a foreign source. Accordingly Dr. Gosh suggested in his note that the ore could be sent to a foreign laboratory (M/s Rio Tinto, London) for leaching tests and also a visit to Jaduguda by them. Dr. Bhaba agreed to the suggestion and bulk ores obtained from Jaduguda were sent to M/s. Rio Tinto. The report from Rio Tinto was very positive and the go ahead for starting a mill at Jaduguda was thus cleared. Rama Rao was also instrumental in taking Dr. Gosh to Kolar Gold Fields to see Suri Subramaniam and who consented to become the Mines Manager of the Jaduguda Project after his superannuation from KGF in 1959. From 1962, Rama Rao was in charge of over-seeing the geological studies (mapping, studies of bore hole cores, establishment of a core library and others) at the STB and almost 50% of AMD's geologists were posted in Singhbhum since the Singhbhum belt had all the potential uranium prospects and some exploratory mines (Jaduguda, Keruadongri and others). He had established petrological and chemical laboratories at Sunder Nagar to support the field investigations. In fact these were the first laboratories outside the all India headquarter of AMD at New Delhi. Thus he was uniquely placed in AMD with regard to both field and supporting the laboratory facilities. His earlier links with Dr. Bhaba at Bangalore gave him the added advantage of meeting Dr. Bhaba in Singhbhum. On one such occasion, he recalls as to how he was requested by Dr. Bhaba to come to meet JRD Tata in Tisco Chairman's bungalow, Jamshedpur. Rama Rao had carried with him the composite geological map of the Singhbhum Cu-U belt that he got made after taking over charge of Singhbhum operations. Dr. Bhaba saw the map and called J.R.D. Tata to have a look and hear Rama Rao's briefings on different prospects and exploratory mines. J.R.D. Tata appreciated the efforts and advised Bhaba to intensify efforts in Singhbhum. Rama Rao also recalls that 'Bhaba was keen to implement Dr. P.K.Gosh's plan of reorganization of AMD when Bhaba left Jamshedpur in a plane piloted by JRD Tata. Bhaba's last visit to Singhbhum was during 1st January 1966 when he met about 60 officers of AMD over a cup of tea and enquired about the work, and their welfare, a rare event. Rama Rao accompanied Dr. Bhaba to the TISCO guest house and en route told him his commitment to revamp and revitalize AMD and he should come to Bombay 'to get it done'. Unfortunately providence willed otherwise and Dr. Bhaba died in an air crash on Mt. Blanc, Swiss Alps, on January 21, 1966.

Rama Rao had also closely interacted with Vikram Sarabai when he became Chairman of AEC and Secretary of DAE. Sarabai was keen to substantiate uranium reserves at 600 m depth levels

at Jaduguda so as to make firm investment decisions and also had supported plans to reorganize AMD as revealed by Rama Rao.

Gosh's plan of reorganizing AMD began to take shape by early 1970s. AMD had a new Director in 1974 (P.K. Dhar) after almost 15 years after the death of P.K. Gosh in 1959. When Dhar retired, Rama Rao was the senior most to become the Director. However, it seems in the interview for directorship, he was rather reluctant to commit on the shifting of AMD headquarters from New Delhi to Hyderabad in 1974 as per government policy which deprived him from the coveted title. Dr. G.R. Udas became the Director in 1974 and the process of shifting its headquarters from New Delhi began amidst stiff opposition from the well entrenched Delhi groups. Nevertheless, the dynamic leadership of Dr. Udas prevailed with the cooperation of a number of senior people including Rama Rao. At Hyderabad, he was in charge of all laboratories of AMD and its drilling operations spread all over India. Apart from these he was instrumental in organizing an IAEA, SE Asia regional training programme at Hyderabad in 1974, organized and conducted by Dr. S. Viswanathan, who later became the Director of AMD in 1993. Rama Rao also started the Refresher Course for AMD officers in 1975. He also co-ordinated the protocol of chemical analysis (Minor and trace elements) of samples jointly collected by GSI, AMD and NGRI, the International Archaeo Geochemistry Symposia held at Hyderabad during 1977 at NGRI, Hyderabad. I had witnessed his unassuming and yet very effective ways of achieving results during my tenure at the XRD laboratory at Hyderabad in 1977.

Rama Rao superannuated on January 1977 and the news of establishment of a Drilling camp at Bodal with construction of cement-concrete huts for drilling crew and geologists was received. He also served as Secretary of the Geological Society of India during 1977-78 and had been a Council Member. Rama Rao expressed his happiness that he had always strived for better amenities for the geologists and drillers who spend a large part of the time doing field and other exploratory work. He was also never resentful as to the difficulties faced by earlier generation of geologists compared with the present day amenities and flexibilities while carrying out field work. He accepted them as part of a changing scenario in all disciplines of science, technology and life. He had reconciled also with the demise of his wife eight years ago challenged by dementia. In his demise AMD lost a great historian of its early history and the geological fraternity an active fellow. He used to keenly follow the papers published in the Society's Journal and discuss with me those pertaining to uranium in passing. In 2014 he wrote an overview the current status of uranium resources of India especially after the announcement in news papers regarding the proving of a major uranium resource base in the Cuddapah basin in Andhra Pradesh, surpassing the Singhbhum inventory with which he was closely connected during his tenure in AMD. He recalled, how prophetic Dr. Gosh was in the 1950s about the uranium prospects of the Cuddapah basin.

Rama Rao is survived by his son Anand, daughter-in-law Reka, grand daughter Archana, grandson Avinash and his wife Priya.

*Bangalore*

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