

CHELAKARA SIVARAMA VAIDYANATHAN

(14 November 1931 - 1 September 1999)

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C. V. Raman



CHELAKARA SIVARAMA VAIDYANATHAN

(1931-1999)

Elected Fellow 1982

CHELAKARA SIVARAMA VAIDYANATHAN, a distinguished enzymologist, and a Fellow of the Indian National Science Academy, who retired as Professor & Chairman of the Department of Biochemistry, Indian Institute of Science, Bangalore, passed away at his home in Bangalore on September 1, 1999.

FAMILY BACKGROUND AND EDUCATION

CS Vaidyanathan was born on 14th November 1931 to Sivarama Iyer and Lakshmi, in Palghat, Kerala. Vaidyanathan and his sister Rasam were the only children of their parents. He had his schooling in Vadakkancherry in Kerala, and obtained his B Sc degree in Chemistry in 1950 at Maharaja's College, Ernakulam, Kerala. For his graduate studies, he joined the Department of Biochemistry, Indian Institute of Science, Bangalore, and obtained his M Sc degree by research in Biochemistry in 1952. Subsequently he registered for the doctorate programme in biochemistry at the same department, under the guidance of GIRI KV, and obtained his Ph D degree in Biochemistry in 1954.

PROFESSIONAL CAREER AND SCIENTIFIC CONTRIBUTIONS

Vaidyanathan spent two years (1956-1958) at University College of Swansea, UK working with H Street on plant metabolism and then returned to India. He joined as a Lecturer in the Department of Biochemistry, Indian Institute of Science in 1960. In 1965, he was promoted as Assistant Professor, and in 1969 he was promoted as Professor, a position in which he stayed on till his retirement in 1991. After retirement, he continued to work as Emeritus Professor of Biochemistry at the Indian Institute of Science till his death in 1999.

Vaidyanathan's research investigations were mainly concerned with the metabolism of phenolic and chloroaromatic compounds in plants, fungi and bacteria. This work led to the discovery of new reaction pathways involving these substances.

During the course of these investigations, two new enzyme systems, one catalysing the conversion of O-aminophenol to isophenoxazine and the other involved in the conversion of isophenoxazine to catechol, were discovered. In addition, Vaidyanathan and his associates were the first to study isolated enzyme systems involved in the aromatic ring fission in higher plants. For instance, the



isolated an enzyme from *Tecoma* leaves, which catalyses the oxidation of 2,3-dihydroxybenzoic acid, leading to the isolation of an aliphatic product which was characterized as 2,5-dioxa-3,7-dioxobicyclo (3:3:0) octane 8-carboxylic acid. They also cloned a gene involved in the degradation of the herbicide, 2,4-dichlorophenoxyacetic acid (2,4-D) by the bacterium *Pseudomonas cepacia*. This gene was shown to be present on a 90 kb plasmid, which was then sequenced by digestion with Bam HI and Hind III.

In addition to carrying out his own investigations, Vaidyanathan often collaborated with other groups not only in his department but also in sister departments like Microbiology & Cell Biology. Many of his students are now occupying prominent positions both in India and abroad. He had to his credit over 127 research publications.

Vaidyanathan was elected a Fellow of the Indian Academy of Sciences in 1978, and a Fellow of the Indian National Science Academy in 1982. He was the recipient of Golden Jubilee Award of the University of Mysore in 1969, the PS Sarma Memorial Award (of the Society of Biological Chemists) in 1975, the JC Bose Award and the Hari Om Ashram Trust Award, both in 1976.

VAIDYANATHAN AS A HUMAN BEING

Vaidyanathan was acknowledged by everyone as a thorough gentleman and a sincere friend. His facile use of the English language was always a source of pleasure to his listeners, who looked forward to his presentations in meetings and symposia. His popularity among his colleagues could be gauged by the fact that, in a profession where faculty supervisors often go to the extent of advising their students to avoid discussing their project or thesis work with other faculty members in the department, many of his colleagues would frequently entrust their students to take guidance from Vaidyanathan whenever they went on sabbaticals. In his passing away, the scientific community has lost a person of exemplary qualities, an eminent scientist and a modest and kind-hearted person.

Professor Vaidyanathan is survived by his wife Visalakshi, son (Sivaram), daughter (Jayalakshmi Raghavan) and two grandchildren (Ramya and Shloka, daughters of Jayalakshmi Raghavan).

EDUCATION AND CAREER-SUMMARY

- 1950 B Sc Chemistry, University of Madras
- 1952 M Sc Indian Institute of Science/ Madras University
- 1954-56 Ph D Biochemistry, Indian Institute of Science, Bangalore
- 1956-58 University College at Swansea, UK



1960-65 Lecturer, Biochemistry, Indian Institute of Science, Bangalore

1965-69 Assistant Professor, Indian Institute of Science, Bangalore

1965-91 Professor, Indian Institute of Science, Bangalore

1991-99 CSIR Emeritus Professor, Indian Institute of Science.

HONOURS, DISTINCTIONS AND AWARDS

Vaidyanathan has been honoured with the following honours and awards during his illustrious career.

Honours

1978 Elected Fellow, Indian Academy of Sciences, Bangalore

1982 Elected Fellow, Indian National Science Academy (INSA)

1974-75 Dean, Faculty of Science, Indian Institute of Science

1974-75 Member, Senate Committee for Research and Academic Policy, Indian Institute of Science.

1976-77 Member, Editorial Board, Indian Journal of Biochemistry and Biophysics

1978-82 Associate Editor, J Indian Institute of Science

Awards

1969 Golden Jubilee Award, University of Mysore

1975 PS Sarma Memorial Award

1976 JC Bose Award

1976 Hari Om Ashram Trust Award

Memberships

- Life Member, ex-Vice President, Indian Society of Biological Chemists
- Life Member, Association of Microbiologists, India

SUMMARY OF SCIENTIFIC CONTRIBUTIONS

Professor Vaidyanathan has made important contributions to the knowledge of the metabolism of aromatic compounds and has been responsible for the elucidation of several new pathways and for the discovery of new enzymes having novel types of mechanism of action. His studies had demonstrated for the first time the fission of the aromatic ring by plant enzymes. He was one of the first obtain evidence for the



involvement of superoxide anions in certain enzyme-catalysed reactions. Professor Vaidyanathan had published over 127 research papers during his scientific career.

ACKNOWLEDGEMENT

An obituary article on CS Vaidyanathan, written by Professor T Ramakrishnan of the Indian Institute of Science, Bangalore, and published in *Curr Science* (<http://www.ias.ac.in/currsci/oct25/articles34.htm>) has formed the basis for the compilation of this memoir. The author would like to thank Ms Jayalakshmi, daughter of Professor Vaidyanathan for providing some personal details regarding the family.

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