J Venkateswarlu

# JILLELLA VENKATESWARLU

## (1912-1978)

## Elected F.N.I. 1961

JILLELLA VENKATESWARLU was born in an orthodox Hindu family on March 21, 1912 at Komaragiripatnam, East Godavari District of Andhra Pradesh to the worthy parents, Srimathi Lakshmi Devi and Sri Ramamurty.

### EDUCATION

During his childhood, the family moved to Kakinada, a town in the same district, where Venkateswarlu had, almost all his education, from primary school to college. Throughout, he stood first in his class and was awarded prizes and merit scholarships. As a student, he was modest and essentially shy but never lacked the courage to face difficult situations. His father, himself a teacher, was particular that Venkateswarlu should take up a learned profession. So, after his B.Sc. with Botany as main, and Zoology and Chemistry as subsidiaries, he pursued his M.Sc. (Botany) at the Banaras Hindu University, Varanasi. Pandit Madan Mohan Malaviya, then the Vice-Chancellor of Banaras Hindu University, was impressed with his merit and gave him a scholarship. He again secured first rank in his batch.

During his undergraduate courses, he came under the influence of Sri Goparaju Ramachandra Rao (GORA), an illustrious teacher who later became a renowned social reformer, Dr U. Lakshmana Rao, Sri T. U. Chacko, and in the post-graduate courses, of Professor A. C. Joshi and Professor Y Bharadwaja. Soon after passing his M.Sc. examination in 1934, he was made a member of the teaching staff of the Botany Department of the Banaras Hindu University, where the foundations for his research career were laid under the inspiring guidance of Professor A. C. Joshi. Later, he came into contact with Professor P. Maheshwari, who was impressed by his ability and made him a close friend and encouraged him throughout.

### PROFESSIONAL CAREER

In 1937, he was appointed Lecturer in Botany at the Andhra University, Waltair, to teach Pharmacognosy. He was specially selected by Dr C. R. Reddi, the well-known educationist and Vice-Chancellor of the Andhra University, when Pharmacy courses were started. There, he came in contact with Professors S. Bhagavantam and T. R. Seshadri who encouraged him to continue his researches, and the Andhra University provided him special facilities.

With the opening of the Erskine College of Natural Sciences in 1942, he taught all aspects of Botany first to the B.Sc. (Hons.) Geology students and later to the B.Sc. (Hons.) and Post-graduate students of Botany. The D.Sc. degree was awarded to him in 1946 and he was promoted to the post of Reader in Botany. Impressed by the high appreciation of his D.Sc. thesis by the three foreign examiners, Dr C. R. Reddi and the Syndicate of the Andhra University deputed him to the University of Cambridge, England, for specializing in Cytogenetics. There, inspired by his research guide, Professor D. G. Catcheside, he conducted elegant researches on chromosome behaviour in autotetraploid maize, and also on the understanding of the embryological phenomena in *Oenothera blandina* De Vries, a deficiency-duplication heterozygote. While at Cambridge, he came into contact with Professor R. A. Fischer, the outstanding mathematical geneticist, who put into his mind for first time the need for a statistical approach to cytogenetic problems. On his return from Cambridge with a Ph.D. in Cytogenetics in 1951, he was elevated to Professorship and was appointed as Head of the Department of Botany to succeed the earlier distinguished personalities, Professors M. O. P. Iyengar and G. N. Rangaswamy Ayyangar. With his knowledge and research experience in several areas of Botany, he became an asset to the University.

He was the chief architect in building up the Botany Department of the Andhra University as a leading centre in India with a good reputation not only for high quality of training imparted to students but also for excellence of research carried out under his leadership. He guided researches in plant embryology in the beginning and later concentrated on plant cytogenetics particularly on crop plants. He was also interested in Vegetative Anatomy, Floristics, Plant Physiology and encouraged research in Aerobiology, Plant Pathology, Marine Algae, Wood Anatomy and such other areas that promoted multidisciplinary work in plant sciences. He successfully developed the Department into a well-integrated unit of all aspects of Botany.

## Contributions

His main contributions lie in the field of Plant Embryology and Plant Cytogenetics In Plant Embryology, he was the first to describe the cell lineages in Embryogeny. He applied the systems of the famous French botanists, Souges and Crete, and the American botanist Johannsen on the large order Myrtales which resulted in a great deal of significant research in Systematic Embryology of Angiosperms in our country. In cytogenetics, he and his students were the first to map the pachytene chromosomes of several crop plants like Sorghum, Pearl millet, Job's tears, Solanums, Tomatillo, Mustards, Brassicas and several fodder grasses. This work is of considerable significance both for understanding the genome relationships and for its potentiality in application to crop improvement. His studies on the dynamics of chromosome behaviour in the autotetraploid maize, worked out in Cambridge, and later extended to other crops by him and his students, were both unique and difficult. In recognition of this work, the University Grants Commission sanctioned a Special Assistance Centre in

Cytogenetics for the Department of Botany under his leadership. He was looked upon as an outstanding authority on Plant Cytogenetics in the country and was specially known for his skill in developing methodologies and for his interpretative abilities. Professor Catcheside expressed his opinion about him as one who *"has a great deal of skill in his science, a real love of his work and an extraordinary degree of appreciation and devotion to essential detail."* His studies of the infrequent embryological events on genetically marked strains of Maize and *Coix* covering haploidy, heterofertilization and apomixis, were an attempt to bring about an alliance between Embryology and Genetics, a field which is difficult as well as necessary. He worked with great determination ignoring several lucrative offers from other institutions. He contributed much to the growth and development of Botany not only in the Andhra University, but in Andhra Pradesh as a whole.

Thirty students took their M.Sc. (by research) degrees, three their D.Sc. degrees and nineteen their Ph.D. degrees under his supervision. Many of them have occupied or are holding positions of distinction in India and abroad.

At the Andhra University, his rise was phenomenal. He was a member of the Academic Council and Senate throughout; Principal, Colleges of Science and Technology (1968–71); Member of the Syndicate (1970–73) and was elected Chairman, Faculty of Science (1969–72). He discharged his duties ably in all these capacities without allowing them to interfere with his teaching and research.

He retired as Professor and Head of the Department of Botany, in 1972. In recognition of his meritorious service, the University appointed him as Emeritus Professor, a position he held till his last day. The Indian Council of Agricultural Research, appointed him as Emeritus Scientist (1972–75), and the University Grants Commission as Research Scientist (1975–78). He kept himself active till the very end.

## Honours

During his eventful career as a scientist and teacher for over 40 years, many were the awards, honours and distinctions conferred on him. The Indian Botanical Society awarded him *Birbal Sahni Memorial Gold Medal* (1971) and the Indian National Science Academy, the *Bashambarnath Chopra Lecture Award,* 1974. The Government of Andhra Pradesh honoured him as one of the eminent scientists during the World Telugu Conference held at Hyderabad (1975). He attended the VII International Botanical Congress at Stockholm and Upsaala, Sweden (1950). He was a Fulbright Fellow and Visiting Professor at the Department of Genetics, University of Wisconsin, Madison, U.S.A. (1963–64) under the Indo-U.S. Educational and Cultural Exchange Programme. Here, he was actively associated with the paramutation work in maize in collaboration with Professor R. A. Brink. He also visited several Institutions in U.S.A. and came into contact with distinguished scientists like Professor M. M. Rhoades, Professor P. C. Mangelsdorf, Professor E. B. Lewis, Professor L. F. Randolph, Professor G. W. Beadle and others. Under the Indo-Soviet Cultural Exchange Programme,

he toured Soviet Russia in 1967 giving lectures at various Universities, Institutes of Genetics, Academies of Agriculture on Crop Plants and held discussions with Academicians like Professor Dubinin, Professor Loboso and others. He participated as an invited delegate in the Binational Conference for Education and Research in Life Sciences held at Bangalore (1971) under the auspices of the National Council for Science Education of India, University Grants Commission and United States National Science Foundation. He chaired many national and international symposia and participated in an Indo-Soviet Symposium on Plant Embryology in 1977 held at Leningrad, U.S.S.R.

He was connected with many Scientific bodies and Institutions. He was Secretary (1956–61), President (1962), Vice-President (1963) and Treasurer and Business Manager (1966–72) of the Indian Botanical Society with head-quarters at Waltair; President, Botany Section (1962) of the 49th Indian Science Congress; President, Indian Society of Genetics and Plant Breeding (1966); Founder-President (1966, 1967) and Vice-President (1971), Indian Society of Cytology and Genetics; Elected Fellow (1961), Indian National Science Academy and Member of its Council for 3 years (1966–68); Elected Fellow (1952), Indian Academy of Sciences; Fellow (1963), Indian Botanical Society; Fellow (1956), Indian Society of Genetics and Plant Breeding; Foundation Fellow and Vice-President (1971–74), Andhra Pradesh Academy of Sciences; Convener and Secretary of the Sectional Committee No. VI (Botany, Applied Botany etc.), Indian National Science Academy; Member of the Basic Research Committee (Exploration), Indian National Science Academy; Member, Council of Andhra Pradesh Academy of Sciences; Member, Central Advisory Board of Biology, Government of India; Member, University Grants Commission Expert Committee; Member, Panel of Scientists, University Grants Commission; Member, Advisory Committee, Botanical Survey of India; Member, Executive Council, National Botanic Gardens, Lucknow; Member, Botany Committee, Indian Council of Agricultural Research; Member, Editorial Boards of several Scientific Journals; and Member, Boards of Studies of several Universities.

## Personal Virtues

Inspite of his high stature and busy schedule, he was always available to his students and colleagues for academic discussions. Always courteous and dignified, he was soft spoken, but when necessary very outspoken also even if he knew that such open expressions could affect his personal career. Both young and old sought his advice and this was always given with careful consideration of pros and cons. He was a modest and warm individual with a score of students, colleagues, friends and admirers, all over the world. His friendship transcended beyond the plant science community and many eminent personalities in various walks of life, were his good and close friends. He was sympathetic to meritorious poor students and often helped with their college fees, remembering his own hardships during his college days. He displayed as much concern for his students as he did for members of his own family.

## Family

He was married in 1936, to Srimathi Manikyamba, a simple and affectionate lady from a Zamindari family, and had three sons. The eldest is a Chemical Engineer, the second a Medical Doctor and the last a student of Philosophy.

## Death

After a life full of events, he died suddenly on May 20, 1978 at the Waltair railway station, soon after detraining, due to a massive heart attack, before any medical assistance could be given. In his death, the botanical community of India lost a great savant and the Andhra University a dedicated scientist. The Department of Botany, whose present position is largely due to the labours of Professor Venkateswarlu, remains a glorious tribute to the memory of his selfless service and ambition. He will be remembered not only for his scholarship but also for his deep sense of humanism.

Rolla S. Rao
Panuganti N. Rao

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