

## IN MEMORIAM : DR. E. K. JANAKI AMMAL (1897-1984)

Dr. E. K. Janaki Ammal is one of the pioneers of modern Cytology in India. She received her early schooling at the Sacred Heart Convent, Tellicherry, Kerala. She completed her under-graduate studies from the Queen's Mary's College, Madras. She obtained her B.A. (Hons.) and her M.A. (Hons.) degree in Botany from the Presidency College, Madras in 1921 and 1923. The details of Dr. Janaki Ammal's many splendoured career is given at the end of this note. During her post graduate studies at the University of Michigan and the John Innes Horticulture Institute, London, she made fundamental discoveries on the behaviour of chromosomes and the origin of cultivated plants by polyploidy or duplication of chromosomes of ancestral forms.



On her return to India after receiving D.Sc. from Michigan University in 1931, she was appointed as professor of Botany of Madras University at Trivandrum. Relinquishing the teaching of Botany for pure research she accepted the post of Sugar cane Genetisist at Coimbatore in 1934.

The origin of the indigenous sugar cane of India by hybridization of related grasses was reported for the first time after extensive studies made on *Saccharum spontaneum* (the wild cane of India).

The successful synthesis of hybrids between sugar cane and other grasses resulted in the production of one of the sweetest cane to be produced in India, SG 63.32 which has repeatedly been used as a parent in the improvement of canes produced at Coimbatore in recent years.

The hybrid between sugar cane and maize though not of economic value has been internationally hailed as a remarkable scientific achievement and she was invited to the International Genetic Congress in September, 1939, to lay before the botanists of the world, her findings on distant hybridization in sugar cane.

Marooned in England during the war years she helped in filling gap left by those who had abandoned research for defence of their country.

Her discovery of "chromosomes diminution" in plants and the repeated division of cells in Sorghums with extra chromosomes initiated a line of research which has helped to understand the causes of cancer and its association with excessive nucliac acid. Dr. Ammal published in 1945 "The Chromosome Atlas of Cultivated Plants" coauthored with Dr. C. D. Darlington. This is a standard work in Cytology.

After the War she was invited to be the Cytologist to the Royal Horticulture Society and her many publications at this period have thrown light on the evolution of cultivated plants by the gradual change in their chromosome constitution. This information was further utilised for the production of new varieties by chromosome doubling by artificial methods.

She has produced and improved many

horticultural and economic plants which have added to the beauty of gardens and the utility of vegetables. Amongst her achievements are tetraploid asparagus, mustards, peppers, gauvas and fodder grasses which are now being grown on a commercial basis in several countries. One of the mustards used by Coleman has been specially evolved by her.

Dr. Janaki Ammal returned to India in 1952 at the invitation of the Government of India to re-organise the Botanical Survey of India which was lying in an inactive state for over two decades due to lack of funds. Her report was accepted and the reorganised Botanical Survey has been an active Organization since 1954.

As the first Director of the Central Botanical Laboratory of the Botanical Survey of India she initiated genetical studies on the lesser known but important economic plants of India like *Dioscorea*, ginger, turmeric and spices.

**Ethnobotany :** The study of plants associated with tribals was taken up as a special branch of Economic Botany and this has given valuable information in the origin of India cultivated plants especially yams and tuber crops.

On the fundamental side, her genetic analysis of the Himalayan Flora on which she has been working for the last 15 years has revealed the existence of a region of high evolutionary activity in South East Asia along the bend of the Eastern Himalayas.

She initiated cytogeographical studies of the Flora of India which has thrown much light on the relationship of Flora of India with that of Asia, Africa and Malaysia.

Her report on the humid tropics of South East Asia, formed the background paper of the Symposium on Humid tropics held in Kandy in 1957 and it paved the way for

concerted action for the study of tropical vegetation from a genetical angle.

Since 1959, she has been engaged in organizing cytogenetical studies on medicinal plants of India at the Regional Research Laboratory, Jammu and through her efforts a garden of Medicinal Plants of over 1500 plants was established for cytogenetical studies of the medicinal plants of India. This has also resulted in the synthesis of improved varieties of garlicks, mint (the Jammu mint), *Dioscorea*, *Rauvolfia*, Lemon grass, *Matricaria* and *Vinca* with higher active principles for the drug industry of India by hybridization and induction of polyploidy.

A Fellow of the Royal Geographical Society of London her search for plants has taken her to remote regions of India as well as Japan, China, Malaysia, Ceylon and Nepal. She has only recently visited Ladakh and brought back material which has important bearing on the understanding the affinities of the Flora of Ladakh with that to Central Asia and Tibet.

As a President of the Botanical Society of India and the Indian Society of Genetics and Plant Breeding, she has given fresh impetus to botanical research in India.

She was an invitee by the Wanner Gren Foundation to attend the Symposium on Man's Role in Changing the Face of the Earth, held in Princeton in 1956.

She also took part in the first Atoms for peace Symposium at Oskreige, U.S.A.

The Honorary Degree of LL.D. was conferred on her by the University of Michigan the same year in recognition of her work.

She was the recipient of the Birbal Sahni medal for Botanical research in 1961 and a Fellow of the National Institute of Sciences of India.

She was also Vice President of the Indian Academy of Sciences.

## POSITIONS HELD

1921-24	Lecturer in Botany The Women's Xian College, Madras.
1925-26 May	Barbour Scholar, University of Michigan.
1926-28 May	Professor of Botany, Women's Xian College, Madras.
1928-31	Research Fellow : University of Michigan, Ann Arbor, Michigan.
1932-34 May-Aug.	Professor of Botany, Maharaja's College Science, Trivandrum.
1934-39	Geneticist-Sugar Cane Research Station, Coimbatore.
1940-45 : (War period)	Assistant Cytologist, The John Innes Horticultural Institution, London.
1946-51	Cytologist to the Royal Horticultural Society, London.
1952-54	Officer on Special Duty Incharge of the Re-organisation of the Botanical Survey of India, Calcutta.
1954-59 Oct.	Director, Central Botanical Laboratory, Botanical Survey of India, Allahabad.
Nov. 1959 to Oct. 1962	Officer on Special Duty, Regional Research Laboratory, Jammu.
Nov. 1962 to Apr. 1964	Chairman of Discipline, Cytogenetics Department, Regional Research Laboratory, Jammu and Hon. Professor of Botany, University of Kashmir.
April 1964 to April 16, 1969	Emeritus Scientist, Regional Research Laboratory, Jammu.
Nov. 1, 1970—to date	Visiting Professor, Bhabha Atomic Research Centre, Trombay.
Nov. 2, 1970—to date	Special UGC Fellow, University of Madras, Centre for Advanced Studies in Botany.

Dr. Janaki Ammal received the following fellowships and honours in recognition to her outstanding work : Fellow of Linnean Society, Royal Geographical Society, The Royal Horticultural Society, London, The Botanical Society of India (Secretary in 1933-38 & President 1960), The Indian Academy of Science (Vice President 1961-64), The Indian Society of Genetics & Plant Breeding (President 1961), Indian National Science Academy (Member of Botanical Committee 1960-1963), Member of the Sigma XI Society of U.S.A. and The recipient of Birbal Sahni Medal 1961.

In her death the country lost an outstanding botanist, geneticist, ethnobotanist and cytologist who blazed trails of scientific discoveries over a period of six decades in the national and international scientific horizon. Her steadfast pursuit of science till her death is a shining example to younger generations.

May her soul rest in peace.

M. P. NAYAR  
*Botanical Survey of India, Calcutta*