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Obituary

Professor Kattungal Subramaniam Manilal (1938-2025)

Professor Kattungal Subramaniam Manilal passed away peacefully after a long illness at a private hospital in Thrissur on the morning of January 1, 2025, just a few months after his 85th birthday. It is with deep pain I am venturing briefly into the life and work of Prof. Manilal.

Manilal was born on September 17, 1938 in North Paravur, Ernakulam district, Kerala, as the eldest son of Kattungal Subramaniam and K.K. Devaki. He grew up in Kodungallur and Ernakulam, along with his brother and sister. Manilal unknowingly entered the study of plants, despite not being much interested in botany at a young age. Through a twist of fate, he decided to get enrolled in Botany at Maharajs's College, Ernakulam and completed his Bachelor's degree in 1957. Then he moved to Madhya Pradesh to continue his studies at Sagar University (now H.S. Gour Viswavidyalaya). After completing his M.Sc. in 1959, he served Sacred Heart College, Thevara in Ernakulam as Lecturer for one year. He moved to Sagar again to pursue his doctoral studies at the same University on the flower morphology and floral anatomy of some members of Asteraceae family, under the guidance of Professor Y.D. Tiagi. Upon completing his Ph.D. in 1963, Manilal returned to Kerala.

In August 1964, aged only 26, Manilal joined the Department of Botany of the University of Calicut (then a Centre of the Kerala University), where he worked for his entire professional life.

Two years later, he married Jyotsna, who remained his lifelong companion and the mother of their only daughter, Anita.

Initial studies of Prof. Manilal were mainly focused on floral anatomy, although he had in his mind to study Van Rheede's *Hortus Malabaricus,* a 17th century Latin treatise on the plants of Malabar, which he had seen during his visit to the Forest Research Institute (FRI) in Dehra Dun while doing his M.Sc. at Sagar. A few years after joining Calicut University, he received a small grant from the University Grants Commission to undertake a re-investigative study on the plants described in *Hortus Malabaricus.* Since a working copy of the book was not available, he took permission from the Dean of Tamil Nadu Agricultural University, Coimbatore to photograph every page of all the twelve volumes in black and white. He began working on it with the unbound photographic film print of all the volumes in his hand. A student hailing from Kochi, C.R. Suresh started working under Prof. Manilal as a JRF on the *Hortus* project.

Suresh has done excellent work in the ensuing years by collecting specimens of plants that correspond with the illustrations and descriptions provided in *Hortus Malabaricus*.

Despite this, Manilal was aware of the lack of local floras that could help identify the plants in the surroundings. The only work available at that time was J.S Gamble's *Flora of the Presidency of Madras* published between 1915 and 1936. For a better understanding of the flora of this region, in 1969 he assigned V.V. Sivarajan, one of his Ph.D. students, to study the Flora of greater Calicut and Malappuram areas, which was resulted in the discovery of several new taxa. Later, 'Flora of Calicut' was published as a book. In 1977, Dr. Sivarajan, his student, became his colleague in the Department of Botany, but he died before Prof. Manilal retired. Manilal was deeply affected by his untimely demise.

In the late seventies and early eighties, Silent Valley, a small tract of wet evergreen forests in Palakkad district of Kerala, gained world attention when the Government wanted to construct a dam across Kunthi river. There were debate over this hydroelectric project. At that time, the plant diversity of this region was not scientifically analysed and many of the arguments for and against the project were not supported by accurate data. Manilal could not keep away from the ongoing discussions on the feasibility of erecting a dam across the Kunthi river, submerging vast tracts of forest land. Manilal's gentle surveys in Silent Valley led to the discovery of several new species, new distributional records and rediscoveries of some species that are thought to be extinct. His findings submitted to the Department of Science and Technology, Government of India revealed the richness of biodiversity, which ultimately led to the abandonment of the project by the central Government. The report was published as a book in 1988. All the voucher specimens used for this publication are well preserved, digitised and documented at Calicut University Herbarium (CALI).

I first met Prof. Manilal in July 1984, when I got enrolled at Calicut University for my Master's Degree. I quickly noticed that he was a teacher of a unique calibre, modest, reserved, and sometimes almost shy, but at the same time hardworking with limited interest outside botany and history. He was never enthused by short-lived scientific fads and always disliked being in the spotlight at the same time. His hard work, dedication, and sharp observational skills made him a respected and admired figure in his field.

Professor Manilal was an excellent organizer. In 1981, he successfully organized the All India Botanical Conference in Calicut University, which had been well attended by botanists across the country.

However, all over the year his prime focus was to unravel the contents of the *Hortus Malabaricus*. His devotion to reviving *Hortus Malabaricus* began in 1958 and lasted for decades, tracking down the most minute details. The language written in primitive Latin was his greatest challenge, and it has become even more difficult to translate. Eventually, it became impossible for him to translate without having knowledge of Latin. Later, Manilal took on the task of learning Latin for the translation. His role went beyond translation. The collaboration that he had with UGC (1975-78) and Smithsonian Institution (1984-1987) enabled him to conduct extensive studies. All the plants except for *Chemthanni* from the Malabar region were meticulously collected by Manilal's team. The interpretation of *Hortus Malabaricus* (co-authored by Dan H. Nicolson and C.R. Suresh) was published in 1988.

Prof. Manilal continued to explore *Hortus* even after his retirement and completed the translation of twelve volumes in both English and Malayalam. The English version was published in 2003 and Malayalam version in 2008. Prior to this work, majority of the information contained in this Latin document was not accessible to the world for over centuries. His translation

opened up new avenues for botanical, historical and linguistic research. His writing focuses heavily on either medico-botanical aspects or the historical, socio-political, and linguistic significance of *Hortus Malabaricus*. Manilal's work earned him numerous accolades. Queen Beatrix of the Netherlands bestowed him with the highest civilian honour, the Officer of the Order of Orange-Nassau, making him the first Asian to receive it. Prof. Manilal was the recipient of Vishwambhar Puri Medal instituted by the Indian Botanical Society (1991), Prof. Y.D. Tiagi Gold Medal instituted by the Indian Association for Angiosperm Taxonomy (1998) and E.K. Janaki Ammal National Award on Taxonomy (2003) from the Ministry of Environment and Forests. His exceptional contributions to science earned him Padma Shri, India's fourth-highest civilian honour in 2020.

Several important leadership positions were held by Prof. Manilal in the field of botany. If one looks back, it can be seen that he was responsible for bringing together a team of plant taxonomists at Calicut University. The Indian Association for Angiosperm Taxonomy (IAAT) was founded by him in early 1990 with Calicut as its headquarters. Manilal served as the founding President, and later as the Vice President of the IAAT for a long time. He has instituted two awards in IAAT, F. Antony Mukkath – K.S. Manilal Award for the best paper in Modern techniques in plant taxonomy, and Prof. K.S. Manilal Award for the best paper in Floristics. He also played a significant role in instituting the Y.D. Tiagi Gold Medal. His contribution to the establishment of the IAAT Library and an Office at Calicut University Campus is remarkable. He continued to be the Chief Editor of IAAT's journal, *Rheedea* until his demise. The members of IAAT always relied on his advice and humanitarian principles to help them build the organization.

Manilal was the President of the Indian Botanical Society. He was active in professional societies and other organizations. He founded the Centre for Research in Indigenous Knowledge, Science, and Culture (CRIKSC) in Kozhikode, and the centre publishes the research journal *Samagra*.

During his academic tenure at the University of Calicut from 1964 to 1999, he was notable for his passion for plant science and his ability to inspire many students and researchers. The three eminent scholars trained under Prof. Manilal, Dr. C. Sathish Kumar, Dr. C.R. Suresh and Dr. M.S. Muktesh Kumar rightly puts in a festschrift released on the occasion of conferring Padma Shri (2020) to Prof. Manilal as "One of the most desirable attributes we learnt from our Guriji Prof. Manilal and tried to pass it on to our own students in turn is his simplicity and a caring outlook towards daily life. We are privileged to enjoy complete freedom throughout and immeasurable trust, both of which facilitated easy expedition of our targets."

In the meanwhile, Manilal had visited many botanical institutions abroad. As a Nuffield Foundation Fellow of the Royal Society, he had carried out research for a short period on Radiation Ecology of certain algae under the supervision of Prof. G.E. Fogg at the University of North Wales, U.K. He also worked at the University of London, UK., the Smithsonian National Museum of Natural History (NMNH) in Washington DC., Rijksherbarium (Nationaal Herbarium) and the University of Leiden, the Netherlands.

Prof. Manilal and his team has discovered 14 new species of flowering plants and re-discovered a few taxa that are thought to be extinct. Published over 200 research papers, of which 90 deals with findings related to *Hortus Malabaricus*. Prof. Manilal authored 16 books, among them five are on *Hortus Malabaricus*. He had supervised the research work of seven students. Furthermore, Prof. Manilal's contribution to the field of botany was immortalized through six plant species named after him: *Cyathocline manilaliana* C.P. Raju & R.R.V. Raju (1999), *Dicliptera manilalii* Karthik. & Moorthy (2009), *Fimbristylis manilaliana* Govind. (1998), *Isachne manilaliana* Sunil,

K.M.P.Kumar & V.P.Thomas (2017), *Lindernia manilaliana* Sivar. (1976), *Schoenorchis manilaliana* M.Kumar & Sequiera (2000).

Manilal retired from service on 30th March 1999. Freed from his numerous academic commitments and official obligations at Calicut University, Manilal continued to work hard, but was not fortunate enough to able to continue for very long as he was struck by a mild stroke in 2006. With one side partially paralysed, he managed to work with left hand to complete the last part of the work on *Hortus.*

It is unlikely that Prof. Manilal's achievement is ever going to be equalled by anybody, and particularly so in a time that favours short-time projects. His long-term work was vital for comprehending the botany and history that are interconnected to the socio-cultural heritage of a region that too depicted in the twelve volumes of a 17th century manuscript in Latin.

The IAAT and the whole botanical community must be grateful for the invaluable services Prof. Manilal rendered in his long and industrious life. A life dedicated to botany peacefully came to an end in the early hours of the New Year. Manilal is survived by his wife Jyotsna and a daughter, Anita.

The IAAT has lost its founder, and *Rheedea* its Chief Editor. A great man has departed, but he will forever live in the minds of plant lovers and all those who knew him.

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