

# BOTANICAL GARDENS AND LIFE ON EARTH

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At the botanical garden at Palode, near Thiruvananthapuram, Kerala | Photo Credit: S. MAHINSHA

On this Earth Day (April 22), we should celebrate the recent decision of the Tamil Nadu government to establish a large botanical garden (the Chengalpattu Botanical Garden) in the State as an important and welcome piece of news. Plants form the basis of civilisation. Humanity has had a long association with gardens ever since man learned to cultivate plants more than 11,000 years ago, marking the dawn of agriculture. The tradition of home gardens — planned spaces around homes to grow edible and medicinal plants — has been noted in ancient texts and depicted in cave paintings, showing the antiquity of gardening.

Gardens capture a part of earth's biodiversity for our enjoyment; modern academic gardens often have hundreds and thousands of dried plant specimens for research.

Rulers, from ancient civilisations to modern ones, owned botanical gardens rich in native plants and plants collected from distant places. These patrons of botanical gardens not only funded but also oversaw botanical collections; a beautiful garden was an important metric of one's prosperity and eclectic administration.

The Palm House at Kew | Photo Credit: Getty Images

Between the 15th to 17th centuries, European explorations led to the establishment of several academic botanical gardens, where both plant curiosities and research on plants were used to justify their establishment. The oldest of these, Orto Botanico di Padova in Italy, was founded in 1545, and the most well-known, the Royal Botanic Gardens in Kew near London, was formally consolidated in 1840. Today, these botanical gardens are major centres of research and education on plants as well as famous tourist destinations.

The oldest of the Indian academic gardens, the Acharya Jagadish Chandra (AJC) Bose Indian Botanic Garden, in Howrah, Kolkata, was established in 1787, albeit under a different name. The Garden is spread over 109 hectares. The city is also the headquarters of the Botanical Survey of India, and thus the country's major research centre in botanical surveys and documentation.

The exact number of botanical gardens in India is not known — the published number ranges from between 10 to 35. Globally, botanical gardens are important centres for plant exploration, discovery and research, as well as biodiversity outreach. Indian botanical gardens have often

lacked this wider perspective. Only a handful of botanical gardens, such as the Botanic Garden of the Council of Scientific and Industrial Research (CSIR)-National Botanical Research Institute, Lucknow (Uttar Pradesh), the Kerala State Council for Science, Technology and Environment (KSCSTE)-Jawaharlal Nehru Tropical Botanic Garden and Research Institute in Palode (Kerala), the AJC Indian Botanic Garden, and, more recently, the KSCSTE-Malabar Botanical Garden and Institute for Plant Sciences, Kozhikode (Kerala) have plant exploration and education programmes.

India is among the countries with a high diversity of plants and animals), with an estimated 18,000 to 20,000 plant species. Plants are the structural foundations of our diverse ecological communities that feed us, provide us with nutrition and medicine, mitigate climate change, enrich our spirits, and secure us against an uncertain future. Yet, our knowledge of our vast botanical heritage is extremely limited.

Our scientific and educational institutions, with a few exceptions, have neglected many aspects of plant biology: taxonomy, ecology, evolution, plant-animal and plant mycorrhizal interactions, population ecology and stress biology to name a few. The neglect is hard to understand given the importance of plants in our daily lives, and our continued pursuit for novel cures and the restoration of nature.

The 300 crore Chengalpattu Botanical Garden (CBG), at Kadambur village in Chengalpattu district, is to spread across 138 hectares, and will be India's largest botanical garden. The CBG has the potential to become a major centre for the exploration and discovery of our plant wealth, a centre of research, education, citizen science, and outreach in plant biology, and be a forceful voice in conservation.

The Royal Botanic Gardens in Kew has been chosen as a key partner for technical expertise on what plants to use and how to maintain them. While the Kew gardens are indisputably one of the largest and sophisticated botanical gardens in the northern hemisphere, many institutions and individuals in India also have the relevant and appropriate expertise in the design and development of gardens. In the past two decades, the botanical gardens in Singapore, Thailand, and Indonesia, to name a few, have set new standards in their research and outreach programmes while maintaining their recreational and ecotourism features. Collaboration with such gardens that share many plant species could be immensely beneficial.

Inside the Temperate House at Kew, the largest surviving Victorian glasshouse in the world, during a restoration | Photo Credit: FILE PHOTO: AFP

Given the complex engineering that goes behind the construction and maintenance of a successful garden, botanical gardens today represent a metric of national success, from the perspectives of science, technology, and outreach, just as in the golden ages of this region, dating as far back as the Maurya monarch, Aoka, when a botanical garden was a display of prosperity, scientific dispositions, and eclectic administration.

And it is not just the botanical garden. In this era of climate change and declining biodiversity, we need every inch of our backyards and elsewhere to nurture native plants and associated living organisms, to remind ourselves and the generations to come of the need to heal our earth through the power of plants.

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