

**TIMES
EVOKE**

HOW DOES YOUR GARDEN GROW?

A garden is a place of pleasure—and power. From their roots, gardens symbolised a complex relationship between humanity and nature. The prehistoric garden, a vegetable patch by a cave, held the seeds of civilisation. As gardens grew more elaborate, so did society—eventually, these represented not just horticulture but art and philosophy in their curated plants, clever sculptures and shimmering water bodies. The garden was no longer nature nurturing humanity—it showcased the human conquest of nature itself in ironed lawns and pruned trees. It also symbolised private property—a garden fence contained volumes of history where power devolved from kings to merchants and a professional bourgeoisie. The democratisation of gardens reflected human society rejecting absolute right and unquestioned might, preferring a shared good for all. Today's public park, where anonymity and bonhomie share a bench, symbolises such humanity.

However, there are threats to this now. As the World Economic Forum finds, cities are growing by 1.5 million people each week. Already generating 80% of global GDP, the early 21st century saw a 66% increase in urban building globally. This has meant a massive loss of greenery, with malls, parking lots and streets cutting across wetlands and woods, wrecking biodiversity and ecosystem stability. As green spaces shrink, so do their benefits. Spending time in gardens lowers stress and heart ailments. But a Lancet study finds the poorest urban denizens could live ten years less than their rich counterparts, due also to differing access to greenery. Alongside, as gardens, with their cooler air and shade, recede, city warmth intensifies in 'heat islands'. This demands more air conditioning, releasing further harmful emissions, hollowing stability more—already, 70% of Earth's largest cities face high risk from pollution, dangerous weather and unbearable heat.

However, as Times Evoke's global experts emphasise, there are solutions. These include investing in public gardens, ensuring equitable access and growing greenery as 'wild nature', minimising mowing, chemicals, etc., rather than adopting turf and exotic species. Cities should also design intelligently—Singapore built gardens in small public nooks, lowering heat and flood risks. The history of Earth lies in a flowerbed. Join Times Evoke to plant the best seeds.

'Growing a garden is an act of scientific discovery — they offer us beauty to cabbages'

Sir Peter Crane, former director of the Kew Royal Botanic Gardens, researches environmental studies at Yale University and is President of the Oak Spring Garden Foundation in the US. Speaking to Srijana Mitra Das at Times Evoke, he discusses why gardens matter so much:

What do organised gardens signify in the broad ark of human history?

They reflect a realisation that we are all fundamentally dependent on plants. It's often easy to forget that the energy which runs our body comes from the sun—this is always mediated through the green world of plants which takes solar energy and turns it into the chemical energy that supports almost all living things on Earth.



Gardens at their core reflect people's realisation that plants are extremely important while providing society with aesthetics and relaxation.

Why did botanical gardens develop?

Gardens existed worldwide from very ancient times. They reflected the interchange of human society with plants, including those grown for food, medicine, etc. In the West, during the 16th century, botanical gardens developed as physic or medicinal gardens—people were deeply reliant on plants for treating health issues. The earliest well-known Western botanical garden was in Padua, Italy.



LONDON'S RAINFOREST: The Palm House in Kew Gardens houses tropical plants

founded in 1545. Others grew in Oxford, Edinburgh and continental Europe, housing collections of plants for medicine. So, the root was very much founded in exploring these medicinally.

Then, during the 17th and 18th centuries, as explorations grew around the world, alongside scientific curiosity, there was also commercial interest in the new plants being encountered by trading and colonial powers. There was an eagerness to know how these were



used and if they could be harnessed for gain. Botanical gardens grew interested in plants beyond science, looking at the commercial prospects of timber, rubber, diverse fruits, etc. Kolkata's botanical garden, which has a classic banyan tree, had its origins in such colonial botany—it has a fascinating history, similar to gardens in Rio de Janeiro (above), Sri Lanka, etc.

What does a garden tell us about the human bond with nature?

Well, gardens developed for many purposes, of course. Some of us would have grown a personal garden at some point partly for beauty and relaxation. But one important driver has always been food—when I was growing up in post-war Britain, it was very common to have allotments where people would grow potatoes and peas. So, some people cherish a garden not only for beauty but also for cabbages.

For a botanical garden, the main idea is developing global collections of plants which are interesting scientifically and help people knowledgeably engage with this world. Another important factor is the provision of green spaces—in the US and UK, during the pandemic, people really wanted to be

outside in natural areas. Botanical gardens, parks, etc., were absolute havens then. Such gardens have always been niches of tranquillity to slip away into from the busy humdrum of city streets, traffic, sirens, etc.

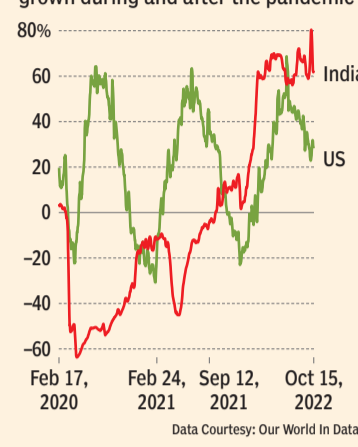
What role do gardens, public and private, play in today's environmental crisis?

Fundamentally, they are a way of connecting people with plants and letting them understand our basic reliance on their world. They also help us understand the importance of biodiversity and letting multiple species exist and carry out processes nature planned, whether it's pollination, purifying air, water, etc.

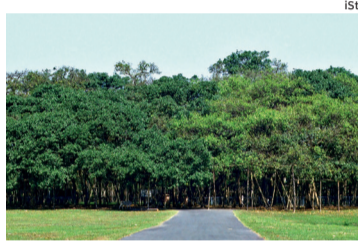
Gardens also have a key role in conservation. In the mid-1990s, a new genus of trees was discovered in Australia, in steep canyons outside Sydney. The total number of these was about 100. There was great interest in getting the genus into conservation—now, it's grown at Kew, Wakehurst and many places around the world. This is building a hedge against extinction. With such low numbers, you never know when the next forest fire will wipe out the last remnants of a native population. This makes it even more pressing to con-

ENTIRELY ECO-LOGICAL

People's efforts to access parks have grown during and after the pandemic



serve plants in gardens ex situ. Botanic Gardens International came up with a list of 440 species of trees known to have less than 50 individuals in the wild—in such circumstances, protecting these in gardens is vital to ensure these plants are not lost forever.



URBAN SPRAWL: Kolkata's Botanical Garden's banyan tree covers 3.5 acres

Gardens once represented restful indulgence — are there scientific insights people growing or visiting them should now have?

This is very interesting because if you talk to people who grow plants, whether in a botanic garden or a private one, you find they get to know them very well. They learn what plants need, how to protect them from disease, which insects visit them and so on. The process of growing plants is one of continual learning—the experience is

GREEN FINGERS

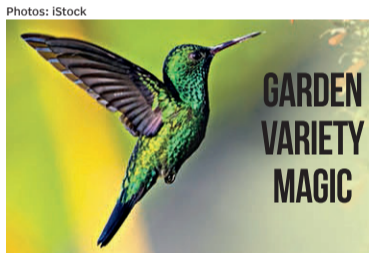
Many writers have grown a bond with gardens. Green spaces were practically a character in Jane Austen's 18th century novels. From London's snobbish lawns to country estates where heroes rode horses and heroines made wisecracks, shrubbery provided dramatic spots—later studies of Austen's work found historic gardens she had described had owners who benefited from the Caribbean slave and sugar trades

India's great writer Rabindranath Tagore, in allegories of individuality, wrote enchantingly of love, joy and memories in an ideal, pure garden envisaged as simple and free. Tagore's own garden was so splendid, it left British visitors in the 19th century spellbound with its magnificent arrangements of trees, landscaped lawns and lakes

F. Scott Fitzgerald's 20th century novels stemmed out of parties and hotels—but New York's Central Park played a role, contrasted with the commercialised lives Fitzgerald's characters lived. Nature's calm also emphasised the fragility of the Roaring Twenties and the irony of humanity racing after riches, often overlooking the wealth all around it

Research: Encyclopaedia Britannica, CNN, Smithsonian Magazine, Yale University, The Guardian

actually a very dramatic one, rooted in a deepening familiarity with plant responses to places and temperatures, their preferences of soils, composts, air flow, sun and shade. People learn these through gardens—and this is a very important way to understand our world, ecology and climatic issues. The act of growing a garden is really one of scientific discovery, although not many people might think of it that way.



GARDEN VARIETY MAGIC
The ruby-throated hummingbird weighs just 3 grams but size doesn't matter for it's among the fastest animals on Earth—scientists in California found hummingbirds, which can even fly backwards, diving at 27.3 metres per second. Little wonder a hummingbird's heart beats 1,200 times a minute compared to a human's 60 to 100 beats. Also, as it consumes half its weight in sugar daily, it's a great pollinator, carrying pollen over gardens on iridescent wings

SEEDS OF TIME
Chameleons like hanging around on stems and branches but it's hard to spot them as they change colour as per—they date back 60 million years. But their long lives have taught them to be wary of humans—they keep their eyes on you, rotating both to get a 360-degree view or training each separately. Their colour changes aren't only to hide though—these also regulate body temperature, attract mates or express their feelings



LADYBIRDS OR LADYBUGS are Coccinellidae beetles—famously polka-dotted, these range within 1 to 10 mm. Ladybirds help to keep insects under control—wise gardeners encourage them to reduce using insecticides. The seemingly placid beetle can consume 60 aphids or sap-sucking destructive insects a day—while the red variety with 12 spots is iconic, there are over 5,000 ladybird species on Earth



'The English garden symbolised conquest — and India's will to have its freedom'

Eugenia W. Herbert is professor emerita of history at Mount Holyoke College. Speaking to Times Evoke, she explains how the British imperial garden took root:

Botanical imperialism was embedded in the British Raj's gardens. The term has many ramifications. One is ideological where you propose your type of garden—and your approach to nature itself—is far superior to anything belonging to the people you want to dominate. The timing of this notion was key as gardening had practically taken on the attributes of a blood sport for the Victorians—the



19th century competing in England among them was amazing, each outdoing the other through lush but orderly lawns, exotic plants, detailed conservatories and glittering water gardens. The Victorian elite thought of gardening as a way of civilising the colonised and the British working classes through rigour and planning. An entire industry grew around the English garden, with professional gardeners, officials and designers, all arguing over what you'd be growing next. The more a plant or tree was thought exotic, the more it



CROQUET, ANYONE? Until it became the Indian Institute of Advanced Studies, the Viceregal Lodge in Shimla resembled an English manor, replete with a perfect lawn

meant a display of money and, as some thought, of taste, which wasn't always the case. The frenzy over gardening was a little like fox hunting, which was ingrained in British life and yet, pointless since no one ate the fox.

It was in India that the English view of gardens faced a challenge. By the 19th century, the imperial dynamics had hardened—the aim was consciously to remake India according to the British agenda. But a complex picture grew, often represented by gardens. Many British residents actually loved Indian gardens with their verdant flowers, fragrances and textures while many Indians began liking the regimented English garden grown in cooler locations. Several colonisers, especially women, were homesick for England—the icon of that became the cowslip, the violet, the larkspur and rose, which they laboured to grow in the heat of India, Africa and Australia.

Empire's gardens also involved economic botany. In India, plants had the fascinating dimension of providing medicine through the science of Ayurveda. This was a key part of colonial botanical explorations—the East India

Company and later, officials of the Raj sought medicinal plants because the mortality rate among them was so high. Company doctors had been trained in botany and knew the importance of the Indian knowledge of plants. Later, they expanded their pursuit to cash crops—the culmination of that appalling search was the mass production of opium which hadn't been a major part of the Indian agricultural landscape.

Whole regions were remade in the British thrust to grow profits. Tea was indigenous in India when growing it in China became harder. Soon, the British saw Indians as a potential market for tea. So, one of the most successful advertising campaigns globally was a British firm's push to create Indian tea drinkers. Gardens were central to these commercial endeavours—plantation gardens were grown in the Western Ghats, Bengal, etc., altering India's ecological fabric.

Also, while at the time, forests were thought of as being infinite and eternal, empire's damage to them was indelible. Some was through the importation of commercial species like the eucalyptus of Australia which was sent to India,

Africa and the US, despite being a rampant invasive tree which altered soil and water qualities. Meanwhile, indigenous woods were razed to provide timber and other forest products. An attempt was also made to plant a cotton economy in India, making it the main source to the north of the US when supplies were cut off from the south during the US Civil War—that had ecological impacts.

The irony was this exploitative colonial life, right down to its flowerbeds, was maintained by an army of 'natives' in India. But the garden embodied a tug of war—the English were happy to have the labour of maalis or Indian gardeners but often, squabbles ensued because the maalis had their own ideas of a proper garden which weren't always the same as the English. Frequently, the maalis didn't budge while the English gave up and let them do it their way, planting luxuriant mangoes, glowing lotuses, bright marigolds and heady jasmine in otherwise prim patches. This suggests there was agency on the Indian side and a strong will to make free decisions—Indians simply couldn't be told entirely what to do. The garden represented that quiet but powerful struggle.



A BOLD MARIGOLD: Indian gardeners often had their way in colonial gardens

'Parks must grow equity by including the urban poor'

Harini Nagendra teaches ecology and sustainability at Azim Premji University, Bengaluru. She tells Times Evoke about environmental justice in parks:

Over time, the urban garden has changed. Once, many middle class Indians lived in bungalows which had patches where you could grow flowering plants, fruits and even trees. Today, most reside in apartments where the space available to a person overall has shrunk. That includes the space for a garden, which now mostly means some potted plants on a balcony. This is heavily conditioned by the direction an apartment faces—if it doesn't get much sun, that restricts what can be grown. Alongside, the choices of plants have changed—earlier, people grew a rich variety, from ornamental roses to plants with medicinal uses like turmeric or food like tomatoes and coriander. These were often native plants which strengthened biodiversity—with them came pollinators and thus, ecosystem services remained stable. With balcony gardens, people want a different aesthetic, often seeking exotic plants which can't be utilised much.

Meanwhile, access to public gardens has shrunk—an intangible but powerful environmental social structure determines this. Economic class is a huge deciding factor here. Many gardens permit people only in the morning and evening and stay shut through the day. This is limiting for children who study in government schools with no playground areas—they can't run about in these open spaces during school hours. This also limits working class people—once, it was common to see an autorickshaw driver or a street vendor resting in the shade of a park. Now, they frequently find the gates locked during the day and must perform remain on the hot streets.

The idea of what these gardens are for has also changed. Many are meant now only for recreation, walking or bird watching but not foraging—yet, this is extremely important for low income communities who need a bit of firewood or medicinal plants in the city. Several parks unhesitatingly restrict their

access to both enter or use the gardens though. At times, the ban is explicit, with residents' associations stating they will decide the right to entry—this usually means anyone who appears underprivileged will find it harder to go in and sit down on the benches.

Yet, access to a garden is key for human beings. Over half the world lives in cities today and that number is only growing exponentially. A city embodies energy but also causes alienation and stress, from the physical strain of pollution, crowds, etc., to mental weariness. A garden is the one place a citizen can relax and by touching grass or watching birds, even refresh their connection with the natural world—in the Anthropocene, where we stand to lose much of nature, this is crucial. We need to be bonded to ecology to even care about it. For many, this is enabled by public gardens.

Providing environmental equity is thus key. Many park timings and restrictions should be renegotiated. Dismantling class barriers can also be achieved by involving groups working with less empowered communities like people in informal settlements or street cleaners. Their voice needs to be heard by those who run parks. It is no one's argument to provide untrammelled access, uncontrolled foraging, etc., but imaginative equity can be reached. In Lalbagh, Bengaluru, our research found the women who clean the garden are amazing foragers—they carry a deep traditional knowledge of plants. Today, urban foraging expeditions are led by celebrity chefs. It would be fitting to also have women workers like these take people through gardens and explain the plants there. This could also help right an unbalanced hierarchy with respect being given to the wisdom and dignity of a certain group. An ideal garden now should include both biodiversity and diversity among humanity.



CAN I SIT HERE? Environmental equity includes the right of diverse groups to access gardens



SHRINKING VIOLET: English colonisers pined for this quintessential UK flower

READERS WRITE

Dear Times Evoke,
Donald H. Pfister from Harvard University was featured brilliantly in TE (3rd June). Pfister's research encompasses important aspects of mycology, including evolution and conservation. It was a treat to read his enlightening thoughts which inspire generations of scientists interested in the fascinating world of fungi. Thank you again!
— Dr Girish B. Mahajan (PhD, Microbiology), Mumbai

I'm a life sciences student and always intrigued to know more about our environment. TE's article on fungi with Donald. H. Pfister was highly informative and I learnt many new details about how fungi has such a key role to play in ecosystems. Thank you for publishing such wonderful articles, TOI, which really evoke our sense to protect our environment.
— Sanskruti Chavan, Kolhapur

Dear TE, you are so heartwarming to us! We literally wait to see what you feature every Saturday. This is the one newspaper portion which appeals to the entire family, from my parents to kids. Reading Donald Pfister was great. We recalled many different fungi we saw on trees during visiting the hills. Thank you, TOI, for this beautiful section which we always keep.
— Suman Mishra, Lucknow

In the middle of a troubling weekend, TE was the only one to turn to for something uplifting. It was so good to read about Donald Pfister's scientific discoveries. Earth has so much to offer us human beings, if only we treat her with respect. Thank you, TE, for always illuminating this fact. This is why you are so loved.
— Sanjeev Deo, Hyderabad

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ONCE, I WAS A LAWN: As urban gardens shrink to balconies, they redefine our link with nature