Native Plants of Sri Lanka

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Introduction

Sri Lanka, often referred to as the “Pearl of the Indian Ocean,” is an island defined not just by its rich cultural tapestry and history but also by its exquisite natural heritage. Among the facets of this natural wealth, the native plants of Sri Lanka stand out as silent witnesses to the island’s geological journey, climatic patterns, and evolutionary processes. This guide aims to take readers on an exploration of the intricate world of Sri Lanka’s native flora, illuminating the immense biodiversity contained within its forests, mountains, wetlands, and home gardens.

Despite its modest land area, Sri Lanka is celebrated as one of the world’s foremost biodiversity hotspots. The island’s flora, shaped by millions of years of isolation and exposed to a spectrum of tropical climates and ecological zones, exhibits exceptional diversity and endemism. Nowhere is this more evident than in Sri Lanka’s rainforests and mist-laden highlands, where species found nowhere else on Earth form complex communities. The National Red List underscores both the immense richness and the vulnerability of this flora, with a significant proportion of native plants threatened with extinction.

Native plants in Sri Lanka are not merely biological entities; they are deeply intertwined with the fabric of everyday life. From majestic timber trees and delicate medicinal herbs to vibrant aquatic flowers and fragrant shrubs, these plants are invaluable to traditional livelihoods, spiritual practices, and the nation’s economy. Sri Lankan culture has long revered “home gardens” as living repositories for a plethora of native species, ensuring their continued use and survival even as landscapes and societies have changed.

Yet, the story of Sri Lanka’s native plants is also one of growing challenges. Rapid land-use change, ongoing habitat loss, unsustainable exploitation, and the introduction of invasive species threaten to disrupt the delicate ecological balance nurtured over centuries. With nearly half of all recorded native flowering plants now considered threatened, and even higher rates among endemics, the island stands at a crossroads—where choices made today will reverberate far into the future.

Nevertheless, Sri Lanka has demonstrated remarkable commitment to conservation through the establishment of national parks, protected reserves, botanical gardens, and dedicated research programs. The future of the island’s native flora also lies in empowering local communities, integrating traditional wisdom with contemporary science, and fostering wider public appreciation of the beauty, importance, and fragility of these plants.

This book endeavors to provide a comprehensive overview of Sri Lanka’s native plants—celebrating their diversity, significance, and intimate connections to people and place. It is an invitation to discover, cherish, and help conserve one of the world’s most enchanting floral treasures.

CHAPTER ONE: The Island's Stage - Geography and Climate

To truly appreciate the tapestry of native plants that grace the island of Sri Lanka, we must first understand the stage upon which this botanical drama unfolds. Sri Lanka, a teardrop-shaped island adrift in the vast Indian Ocean, is a place where geography and climate conspire to create an astonishing array of habitats within a remarkably compact area. Its story is one of ancient landmasses, tectonic shifts, and the rhythmic dance of the monsoons, all of which have profoundly shaped the evolution and distribution of its unique flora.

Located between latitudes 5°55′ and 9°51′ North and longitudes 79°41′ and 81°53′ East, the island lies just off the southeastern coast of the Indian subcontinent, separated by the Palk Strait. While a narrow stretch of sea, this separation, which has occurred and reversed several times over geological history due to fluctuating sea levels, has played a pivotal role in fostering the island's distinct biological identity and high degree of endemism. Geologically, Sri Lanka is considered a southern extension of peninsular India, sharing some fundamental rock formations.

Millions of years ago, Sri Lanka was part of the supercontinent Gondwana, connected to landmasses that would eventually become Africa, Antarctica, Australia, and India. As Gondwana began its colossal breakup, the landmass containing what is now India and Sri Lanka drifted northward. The eventual collision with the Eurasian continent led to the formation of the Himalayas, and it also played a part in the separation of Sri Lanka from the Indian mainland. This ongoing tectonic activity means the island continues its slow, almost imperceptible drift southwestward.

The island's topography is dominated by a significant mountainous core in the south-central region, often referred to as the Central Highlands. These highlands rise dramatically from the surrounding low plains, reaching elevations of over 2,500 meters. Pidurutalagala, the highest point, stands at 2,524 meters. This mountainous area is not a single range but a complex matrix of ridges, peaks, plateaus, basins, valleys, and escarpments.

Surrounding the central massif is a vast, relatively flat to rolling plain that covers the majority of the island's area, extending to the coast. This lowland plain ranges in elevation from sea level up to about 75 meters, making up roughly 75% of the total land area. There are also some isolated hills that punctuate the lowlands, rising abruptly from the plains. The coastline itself is extensive, stretching for about 1,600 kilometers, and features a variety of formations, including sandy beaches, spits,

lagoons, marshes, and occasional rocky outcrops.

This varied physiography is not merely scenic; it is the primary driver of Sri Lanka's diverse climate and, consequently, its varied plant life. The central highlands act as a significant barrier to the moisture-laden monsoon winds, creating distinct rainfall patterns across the island. The island's location within the tropics, between 5° and 10° North latitude, ensures warm weather throughout the year, with temperatures moderated by oceanic winds.

Sri Lanka's climate is characterized as tropical monsoonal, dominated by two main monsoon seasons and two inter-monsoonal periods. The Southwest Monsoon, occurring from generally May to September (sometimes extending into October), brings significant rainfall to the southwestern parts of the island, including the western slopes of the central highlands. The Northeast Monsoon, typically from December to February, affects the northern and eastern regions, bringing rain to those areas.

These monsoon systems, combined with the topography, lead to the traditional classification of Sri Lanka into three major climatic zones based primarily on annual rainfall: the Wet Zone, the Dry Zone, and the Intermediate Zone. The Wet Zone, located in the southwestern part of the island, receives a high mean annual rainfall of over 2,500 mm, largely influenced by the Southwest Monsoon. This zone is characterized by consistent rainfall and lacks a pronounced dry season.

In contrast, the Dry Zone covers a large portion of the north, east, and southeast of the island. It receives a mean annual rainfall of less than 1,750 mm, with the majority of precipitation occurring during the Northeast Monsoon. This zone experiences a distinct dry season, typically from May to September, where moisture becomes a precious commodity for plant life. Some areas in the southeastern and northwestern parts receive even less rainfall, sometimes under 900 mm.

Nestled between the Wet and Dry Zones is the Intermediate Zone, which exhibits characteristics of both. This zone receives a mean annual rainfall generally between 1,750 mm and 2,500 mm, with a shorter and less prominent dry season compared to the Dry Zone. The rainfall in the Intermediate Zone comes from a mix of both monsoons and the inter-monsoonal periods.

Beyond the monsoons, the inter-monsoonal periods also contribute to the island's rainfall, often bringing convectional thunderstorms. The first inter-monsoon season occurs typically in March and April, while the second is around October and November. These periods can bring significant rainfall across the island, particularly in the evenings.

While rainfall patterns define the climatic zones, temperature in Sri Lanka is primarily influenced by altitude rather than latitude. In the lowlands, up to an elevation of

100-150 meters, the mean annual temperature is relatively consistent, hovering around 27°C to 28.5°C. Coastal areas, like Colombo, experience average temperatures of 28-29°C with minimal monthly variation.

As elevation increases, temperatures decrease significantly. In the central highlands, the climate is much cooler. Nuwara Eliya, located at an altitude of around 1,800 meters, has a mean annual temperature of about 15.8°C to 15.9°C. Here, night temperatures can drop considerably, sometimes even nearing freezing in the winter months, and frost can occur for several days.

The daily temperature variation, the difference between the maximum temperature in the afternoon and the minimum before dawn, is also well-marked. This diurnal range tends to increase with altitude and with distance from the sea. Humidity is generally high across the island, typically ranging from about 70% during the day to 90-95% at night. However, humidity levels can be lower in the Dry Zone, particularly in the driest areas.

This intricate interplay of geography and climate—the mountainous heart, the surrounding plains, the coastal fringe, and the rhythm of the monsoons creating distinct rainfall and temperature gradients—sets the stage for the astonishing biodiversity found in Sri Lanka. It provides the diverse environmental conditions, from the perpetually wet and warm lowlands to the cooler, mist-shrouded highlands and the seasonally dry plains, that have allowed a remarkable array of native plant species to evolve and thrive, each uniquely adapted to its specific niche.

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