Botanical Survey of India, Established, Headquarter, Report

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The Botanical Survey of India (BSI) is India's apex taxonomic and floristic research institution under the Ministry of Environment, Forest and Climate Change. Established on 13 February 1890, it provides the scientific foundation for plant conservation, documentation, identification and sustainable use of the country's plant wealth. India possesses nearly 56,177 recorded plant taxa and around 7% of global plant diversity despite occupying only a small portion of the world's land area, making the role of BSI extremely important.

What is Botanical Survey of India?

Botanical Survey of India serves as the national authority for plant taxonomy, floristic research, documentation, conservation and botanical collections in India.

- **Establishment and Founder**: BSI was established on 13 February 1890 under the leadership of Sir George King. It was created to explore, collect, identify and document the plant resources of British India and continues this role today.

- **Administrative Control**: The organization functions under the Ministry of Environment, Forest and **Climate Change**, Government of India and acts as the country's apex taxonomic research institution for plant diversity studies.
- **Headquarters**: Botanical Survey of India is headquartered in Kolkata, West Bengal. Its headquarters includes the Central National Herbarium, Central Botanical Laboratory, Industrial Section Indian Museum and Acharya Jagdish Chandra Bose Indian Botanic Garden.
- **Regional Network**: The institution operates through 11 Regional Centres across India and also manages the Botanic Garden of Indian Republic, Noida, established in 2002 for conservation and research activities.
- **Publications and Reports**: The organization has published several volumes of Flora of India, Fascicle, State Flora (covering 9 states), District Flora (covering 26 districts) and around miscellaneous publications.
- **Scientific Journals**: BSI regularly publishes three important periodicals namely NELUMBO, Vanaspati Vani and Parijata, which disseminate taxonomic and floristic research findings.
- **Digital Initiatives**: The Indian Plant Diversity Information System (IPDIS) serves as a digital platform for plant information, publications, herbarium records, rare books, archival correspondence and specimen databases.

Botanical Survey of India Objectives

The objectives of the Botanical Survey of India focus on systematic documentation and scientific understanding of India's plant resources for long term conservation.

- **Floristic Surveys**: Conduct intensive surveys throughout the country to gather detailed information on plant occurrence, distribution, ecology and economic significance across different habitats and climatic regions.
- **Scientific Documentation**: Prepare reliable records of plant diversity through local, district, state and national floras, ensuring authentic documentation of India's botanical wealth.
- **Collection and Identification**: Collect, identify, preserve and distribute plant materials useful for educational institutions, universities, botanical gardens and scientific research organizations.
- **Custodianship of Collections**: Maintain scientifically organized herbaria and botanical repositories that serve as permanent reference centres for plant taxonomy and biodiversity research.
- **Conservation Support**: Generate scientific information required for conservation planning, sustainable utilization of plant resources and protection of threatened plant species.
- **Knowledge Development**: Promote taxonomic research, biosystematics studies, molecular investigations and plant resource databasing to strengthen botanical science in India.

Botanical Survey of India Historical Background

The historical evolution of the Botanical Survey of India reflects India's growing commitment to plant exploration, taxonomy, biodiversity conservation and scientific documentation.

- **Foundation**: During the colonial period, botanical activities were mainly concentrated at the Royal Botanical Garden, Sibpur, Howrah, which functioned as the centre for plant collection, experimentation and research.
- **Historical Botanical Base**: Earlier botanical documentation was greatly influenced by Sir J.D. Hooker's Flora of British India (1872-1890), which recorded 171 families, 2,325 genera and 14,312 flowering plant species

across South Asia.

- **Indian Flora Documentation**: Within present day Indian boundaries, Hooker's work documented 170 families, 2,073 genera and about 10,200 flowering plant species, creating a foundation for modern botanical studies.
- **Reorganization in 1954**: After Independence, BSI was reorganized. Its responsibilities expanded beyond taxonomy to include biosystematics, conservation, databasing, digitization and training.
- **Modern Scientific Expansion**: The institution later established molecular taxonomy laboratories at Shillong and Pune to integrate advanced scientific methods with traditional taxonomic research.

Botanical Survey of India Functions

Botanical Survey of India performs extensive scientific, conservation, documentation and advisory functions covering all major groups of plants found in India.

- **Plant Exploration and Inventory**: Conducts exploration, inventory preparation and documentation of phytodiversity in biodiversity hotspots, protected areas, tiger reserves, sacred groves and fragile **ecosystems**.
- **Taxonomic Research**: Studies flowering plants, algae, fungi, lichens, bryophytes, pteridophytes and gymnosperms to identify new taxa and improve scientific classification systems.
- **Threat Assessment**: Identifies threatened species, prepares Red List assessments following IUCN guidelines and recommends conservation and recovery measures to government agencies.
- **Ex situ Conservation**: Maintains botanical gardens across different biogeographical zones, conserving more than 150,000 living plant collections including orchids, bamboos, rattans and zingibers.
- **Ethnobotanical Documentation**: Records traditional plant based knowledge of indigenous and tribal communities, helping preserve valuable cultural and medicinal information.
- **National Databasing**: Develops digital databases, e-Flora of India, plant checklists, herbarium records, botanical illustrations and online scientific resources for researchers and policymakers.
- **Protected Area Surveys**: Floristic surveys have been completed in several protected areas, sacred groves, **Ramsar site**, fragile ecosystems and tiger reserves across India.

Botanical Survey of India Plant Discoveries 2024 Report

The Plant Discoveries 2024 Report released by the Botanical Survey of India highlights India's remarkable plant diversity across major plant groups and microorganisms.

- **Total Plant Diversity**: India records 56,177 taxa across all plant groups, representing 100% of the country's documented plant diversity and highlighting its status as a global biodiversity rich nation.
- **Angiosperms Dominance**: Angiosperms are the largest group accounting for 39.82% of India's total plant diversity and forming the backbone of terrestrial ecosystems.
- **Fungi and Algae Richness**: Fungi contribute 28.46% of total diversity, while algae account for 16.22% of India's documented plant wealth.
- **Lower Plant Groups**: India hosts lichens (5.61%), bryophytes (5.07%) and pteridophytes (2.36%), reflecting diverse ecological habitats across the country.

- **Microbial Diversity**: Virus and bacteria groups contribute 2.31% of India’s recorded plant related diversity documented in the report.
- **Gymnosperm Representation**: Gymnosperms account for 0.15% of total diversity, making them the smallest major plant group recorded in India.

Botanical Survey of India Recent Developments

The Botanical Survey of India continues to expand scientific knowledge through discoveries, digitization projects, conservation programmes and biodiversity assessments.

- **Digital Transformation**: Large scale digitization of herbarium specimens, archival correspondence of Wallich, Roxburgh and Hooker, rare books and BSI publications has significantly improved accessibility.
- **Biodiversity Significance**: Nearly 28% of Indian plant species are endemic. Major diversity centres include the Himalayas, Western Ghats and Andaman & Nicobar Islands, which form parts of globally recognized biodiversity hotspots.
- **Notable Discovery**: Botanical Survey of India identified Glycosmis albicarpa, a rare Rutaceae species endemic to the southern **Western Ghats**. The medicinally important plant was discovered in the Panagudi forest region of Tamil Nadu and highlighted the exceptional endemism of the Western Ghats ecosystem.
