

Country / City Charlottesville, VA

University / School University of Virginia School of Architecture

Academic year Fall 2017

Title of the project The Living Things Nursery: Catalog of Plants and Guide to Climate

Authors Bonnie-Kate Walker

TECHNICAL DOSSIER

Title of the project	The Living Things Nursery: Catalog of Plants and Guide to Climate
Authors	Bonnie-Kate Walker
Title of the course	Thesis Project
Academic year	2017-2018
Teaching Staff	Advisor: Teresa Gali-Izard
Department/Section/Program of belonging	Landscape Architecture Department
University/School	University of Virginia



Written statement, short description of the project in English, no more than 250 words

This project explores the climatic intelligence of plants and the potentials of systematically working with that intelligence as a landscape architect, a horticultural producer, or an average plant consumer. The Living Things Nursery Catalogue is a critique of a horticultural industry that has had a largely homogenizing force on plant diversity, contributing to a rapid loss of complexity in the ecologies produced by industrialized societies. Through this catalogue, my goal is to build a system for working with plants that is based on a rigorous look at climatic parameters, enabling a global language for plants that recognizes their agency, adaptivity, and intelligence. To do so, I rely on several ecologists, anthropologists, and geographers of the past and present to explain the capacities of plants and the ecosystems they form, as well as multiple contemporary, open-source databases.

An openness to learning from plants will play a transformative role in our collective decision-making amidst the current climate crisis. This is in an effort to not only demystify the workings of plants, but to contribute to a general culture of attention to the agencies, propensities, and intelligence of living things.

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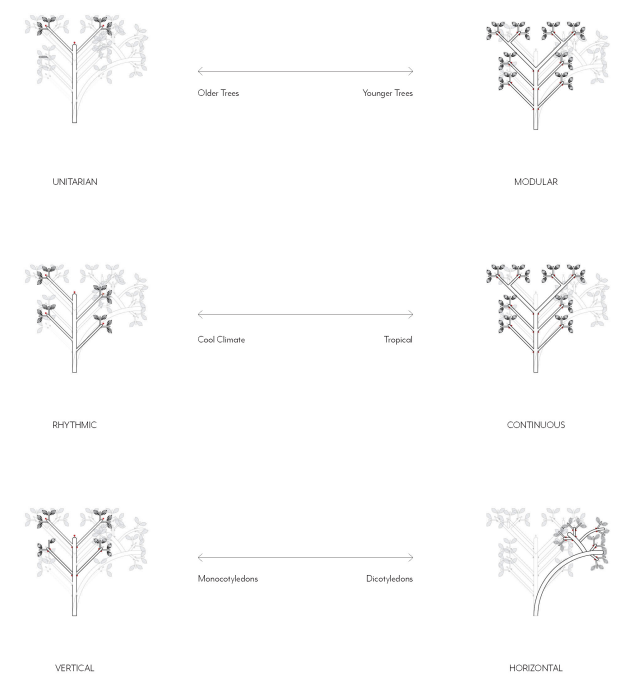
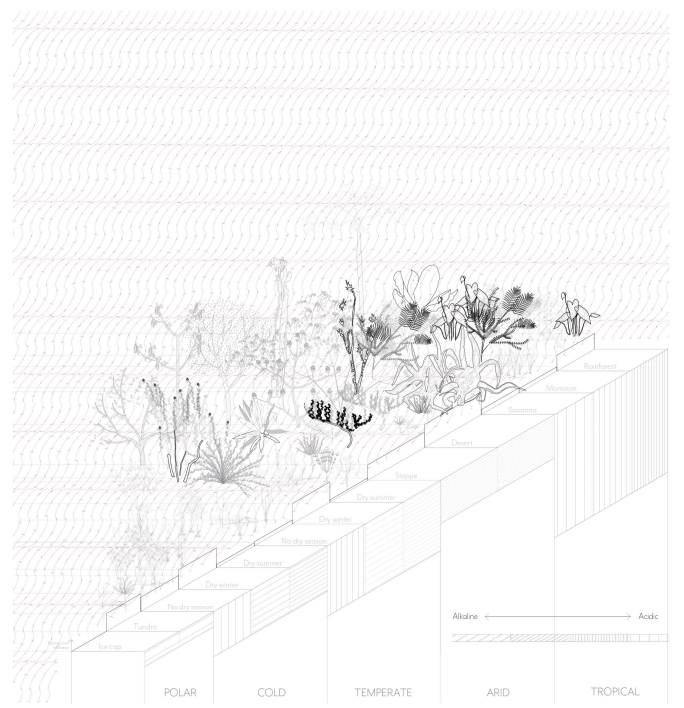
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CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

Barcelona September 2020
SCHOOL PRIZE



The Shapes of Leaves in Shrubs

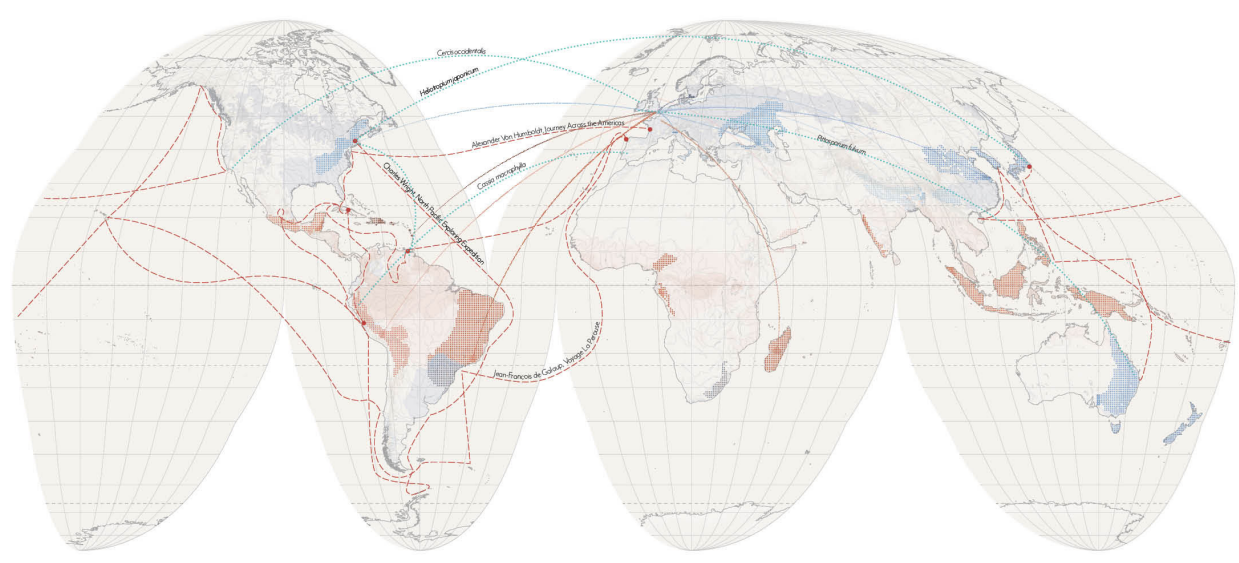
The leaf is a plant's main source of energy, but also its main conduit for water loss. Because of this delicate balance, individual plants employ a wide variety of strategies to achieve maximum energetic benefit from minimum loss of water. Sometimes this results in diversity of shape, or developments like a paler color to reduce evapotranspiration, and small leaf hairs to capture morning fog. Because of their rapid development, leaves can respond very quickly to environmental changes, thus a plant's microclimate can be adjusted to achieve a desired effect in leaf appearance.

Data Sources : Koppen-Geiger Climate Classification Map (Vers. 2006), SoilGrids Database (ISRIC - World Soil Information, 2010), GBIF

Tree Architecture

Tropical trees, unlike perennials, often have no resistance organs at all, because they are never dormant. Botanist Francis Hallé developed a working system for determining the architectural models of trees, mostly derived from trees of the Tropics where there are less severe constraints and more generative competition. There may be several factors that contribute to the architecture of a tree, but the ones that are most climatically-driven are the strategies of modularity, continuity and horizontality to rapidly respond to changing environmental parameters.

Data Sources : Koppen-Geiger Climate Classification Map (Vers. 2006), SoilGrids Database (ISRIC - World Soil Information, 2010), GBIF

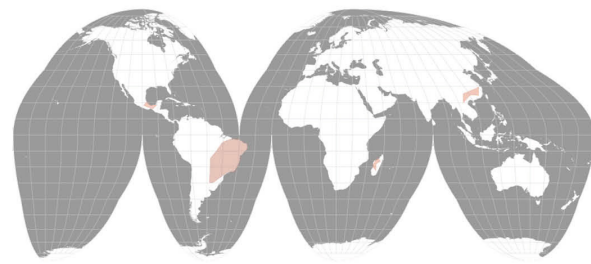


Closing the Loop

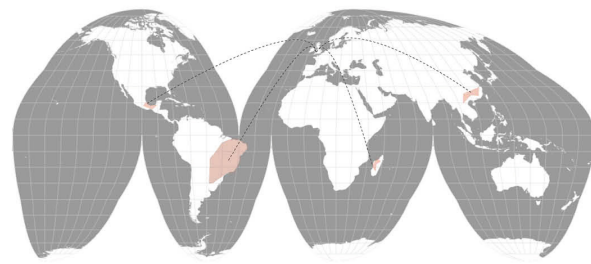
Learning the language of plant responses to climate is like closing the loop of colonialism, connecting our ecosystems back to their ancestral counterparts, and us along with it. We have inherited the plant library of the colonial project and part of the mission of LTN is to return the climate back to the plant by understanding where it came from, and what climatic constraints are driving its behavior.

Data Sources : The Origins of Plants, The Smithsonian Exploration Archive

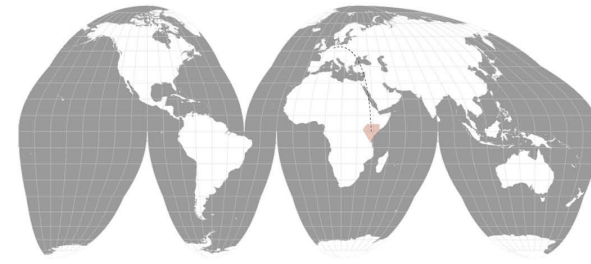




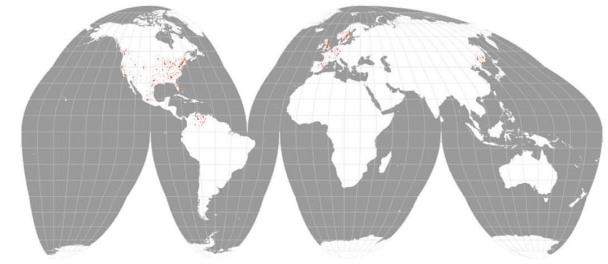
FOUND IN CUBA, BRAZIL, MEXICO, CHINA, SOCOTRANA



COLLECTED BY NURSERIES AND HYBRIDIZED IN LONDON



PRODUCTION FACILITIES OWNED BY DUTCH COMPANIES IN KENYA

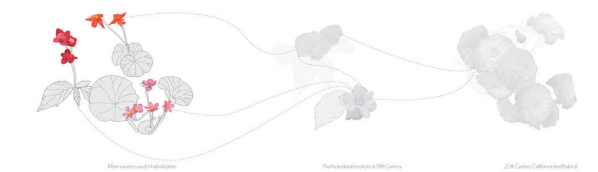
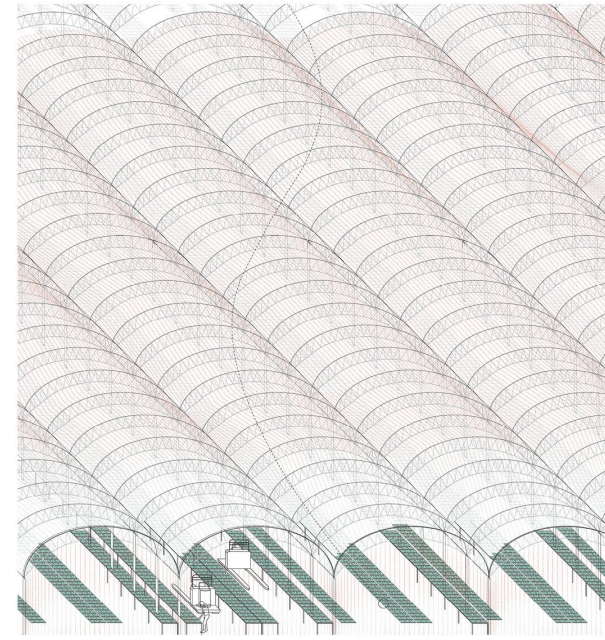
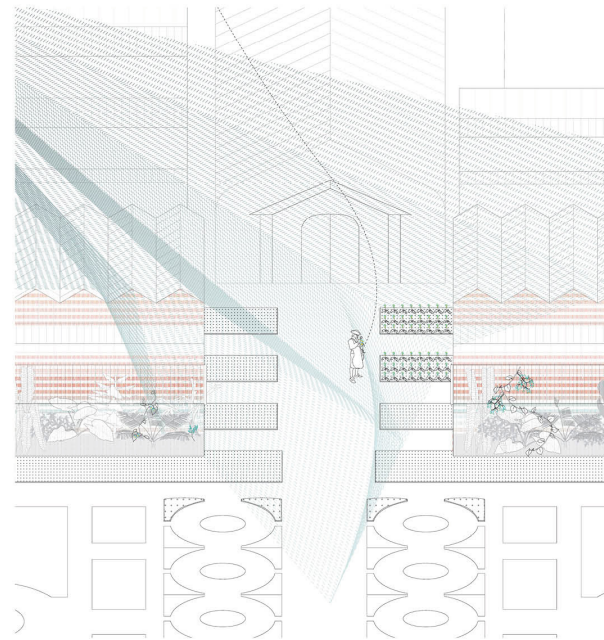


SOLD WIDELY AT HOME IMPROVEMENT STORES AND GARDEN CENTERS THROUGHOUT NORTH AMERICA AND EURC

87,774 SPECIES OCCURRENCES 2,167 DISTINCT SPECIES 150 MAIN HYBRIDS 62 VARIETIES 4,560,000 FLATS SOLD IN THE US ALONE



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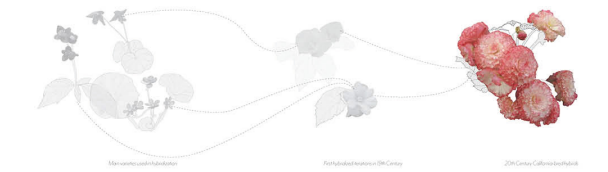
COLLECTION



HYBRIDIZATION



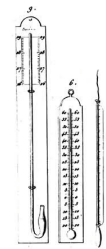
PRODUCTION



CONSUMPTION

"Individual plants existed in a matrix of observations and calculations that were intended to identify the climatic environment in which they thrived and to allow for their replication in another terrain, whether a greenhouse or garden in Europe, or a plantation in the overseas tropical colonies."

MARIE-NOËLLE BOURGUET
Measurable Difference: Botany Climate, and the Gardener's Thermometer in 18th Century Europe, 2005



Stages in the Life of the Horticultural Object

The phenomena of the ornamental plant industry can also be described from the perspective of the plant. In order to understand the workings of the industry from plant to horticultural product, LTN draws the narrative of a particular genus. Begonias, for whom the Begoniaceae family is named, are one of the most popular bedding and potted plants in the garden center industry. Originally called *Totonaxoxo coyolin* in Nahuatl, *Begonia obliqua* arrived to Europe via the travels of Charles Plumier to Mexico and the Caribbean Islands. Other begonias including *B. coccinea*.

Opposite Page: Images adapted from *The Plant Propagation Manual* from the American Horticultural Society

