

**Laura Drouet and
Olivier Lacrouts (eds).
*Greenhouse Stories: A Critical
Re-Examination of Transparent
Microcosms***

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Greenhouse Stories is a collection of essays, art and interviews by nineteen authors and artists who approach the different functions, designs and meanings of greenhouses from widely diverging perspectives. Shifting away from the celebration of greenhouses as examples of technical mastery and exceptional architectural feats, *Greenhouse Stories* invites a critical look at greenhouses as controversial agricultural production tools. The essays, both through text and color photos, offer a rich array of ways to think through various aspects of glass houses built to create artificial conditions for plants where every aspect of their life cycle can be controlled.

Along with solar arrays and windmills, greenhouses are often heralded as an answer to a sustainable future in a warming world. By eliminating insects, regulating temperature and monitoring water supplied to plants, growing plants in a greenhouse is purported to minimise the use of scarce water supplies and keep pesticide use down. Histories

of greenhouses have focused on architectural splendour and technologies introduced via greenhouse construction such as iron framing and prefabricated modular building units. Much coverage of greenhouse agriculture concedes that, while upfront costs can be high, greenhouses can optimise the production of crops on a global scale.

The editors and authors of *Greenhouse Stories* would like readers to take a closer look. As the essays, interviews and photos in this volume reveal, there are significant environmental costs and hidden stories of exploitation associated with greenhouses. Through the glass windows of a greenhouse, one finds both reasons to celebrate the possibility of a more humble and meaningful connection to the Earth and other living beings as well as reasons to decry the exploitation of plants and people in the guise of technological solutions to ecological problems.

In their Foreword, the editors, Laura Drouet and Olivier Lacrouts, working under the pseudonym 'd-o-t-s', invite the reader to see beyond the iron-framed glass structures to notice the role of these edifices as 'controversial (agri)cultural production tools'. They place the greenhouse squarely at the centre of the modern desire to have everything immediately and warn of the alienating disconnect between humans and their native habitats that occurs when they enjoy roses in December or eat strawberries in January. The authors accomplish this shift in perspective through fifteen relatively short pieces that offer histories, investigative journalism and philosophical interviews. A concluding 'Annex' of photo essays highlights greenhouse-related art exhibits, further amplifying the cultural/social depth of the project.

The book should be read as a provocation rather than a traditional scholarly treatment. The book invites browsing and thinking rather than intellectual grappling with an argument, with all the attendant apparatus: although there are extensive endnotes for each chapter, there is no bibliography and no index. This does not mean that there is no substantive, well-informed claim. There is, rather, an urgent argument for thinking carefully about the ways nature is manipulated by humans through greenhouse technologies and the consequences, intended and unintended. The greenhouse acts as a microcosm of human tinkering with climate, light and soil. As such, the project urges a visceral, not just rational, engagement. Texts are presented alongside photographs, line drawings and exhibit storyboards that offer new ways into tales of art, oppression, curiosity and intrigue.

The main body of the book is organised into four parts: 1. Stories to Begin With; 2. Old Stories; 3. Current Stories; and 4. Stories of Renewal. Part One, 'Stories to Begin With', introduces the questions greenhouses evoke: What is special about these architectural marvels? What makes them problematic? What can they tell us about the state of human/nature relationships? In the opening essay, 'Cut Off', the editors offer a number of reasons to reconsider greenhouse technologies. In the nineteenth century, the botanical conservatory offered a space to retreat from increasingly polluted cities. For Europeans, it served as a 'window' into tropical, often colonised, places. But while Victorian conservatories continue to fascinate visitors, commercial greenhouses have sprung up in the background of the global food economy, growing food and flowers out of season and even out of soil. The following two essays in this first section lay out some of the underlying reasons to avoid running headlong into the thrill of greenhouse fixes. Louis Berrios-Negrón in 'The Golden Spike is not the Nuclear Bomb', points to fundamental changes wrought by colonial and capitalist agriculture to demonstrate the kinds of global changes that justify the geologic periodisation of 'Anthropocene'. He argues 'This is not just made visible by square kilometres of industrial greenhouse superstructures sprawling in many parts of the world', but also by billionaires such as Elon Musk, Jeff Bezos, etc., 'who are not selling rocket ships, but peddling rendered, messianic greenhoused real-estate delusions on the Moon and Mars' (p. 34). The final essay in this first part, 'Trappings of the Greenhouse', is a conversation between three scholars loosely organised around the idea of a greenhouse as Eden, as an experiment in climate engineering or as a cabinet of curiosity.

The second part of *Greenhouse Stories* is a collection of three nineteenth-century histories. In 'Plant Horror in the Palm House at Kew', Kate Teltscher connects the brutality of plantation slavery and fear of native peoples to poisonous and carnivorous plants found in the tropical hothouses. Adriana Craciun, in 'Telling Stories with Plant Cases', explores the movement of plants via hermetically-sealed Wardian cases. To decolonise these cases, Craciun argues, we should turn to plants themselves, from breadfruit to ferns. In the last essay in this section, Penny Sparke claims that working in the greenhouse had a liberating effect for white, middle class women. This helped them forge new

identities as strong, capable individuals which played a role in demands for equality by the end of the nineteenth century.

In 'Current Stories', the third section, investigations into large scale greenhouse agriculture reveal serious downsides to greenhouse technologies and materials. Commercial flower cultivation has been deeply implicated in the use of pesticides and in monoculture production. Furthermore, most commercial flowers are genetically modified to be fragrance-free to make them last longer. The authors of 'The Cut Flower Industry', compare production in Kenya to smaller scale enterprises in Scotland to describe more environmentally responsible alternatives. The second essay in this section, 'Mar de Plástico: Europe's Vegetable Garden', centres on the source of vegetables and fruit for much of Europe: greenhouses in Almeria, Spain. Almeria gets plenty of sun but is also very dry. Growers claim that greenhouse agriculture preserves water, which is true; however, aquifers have already been so over-exploited that water shortages are threatening local wildlife. Furthermore, this vast greenhouse agro-industry produces a huge array of waste including plastic particles from the breakdown of greenhouse tarps, fertiliser run-off and 'phytosanitary' overspill (this includes pesticides and other chemicals used to create a 'sanitary' environment in a greenhouse). Even worse is the exploitation of a migrant workforce (from Morocco, Mali, Guinea and Senegal, etc.) living in makeshift shelters and vying for temporary, often dangerous, work as day labourers. The final essay in this section, 'Bright Nights: Greenhouses and Light Pollution', looks at greenhouse expanses – some of them taking up thousands of hectares of land – that grow food in very a short time frame. These brightly lit greenhouses consume a tremendous amount of electricity and confuse migratory birds and disconnect people from seasons and the night sky.

'Stories of Renewal', the fourth section of this volume, highlights case studies for positive change that can emerge from greenhouse horticulture. In 'Nurturing Community', 'Growing Resilience' and 'Keep Digging', authors describe experiments with greenhouses that draw people together. In Scotland's *The Tangled Bank* project, greenhouses were removed while one was converted to a pergola covered with local vines. By intentionally drawing attention to native plants, managers invited visitors to 'rediscover the specificities of the local flora'. In *La Serre* in Casablanca, Morocco, a greenhouse-like 'polytunnel' hosts social events, inviting cultural connections. Other examples are found in Parckfarm

in Belgium, Rochester Square in London, *The Greenhouse Project* in San Francisco, *La Serre dei Giardini* in Bologna, the *Mediamatic* in Amsterdam, and *Effet de serre* in Tunis. These installations invite questions as well as suggesting new ways of being. 'Growing Resilience' describes a farm in central France which aims for a resilient agroecology including a thoughtful use of greenhouses to diversify crops and restore the land. In the final essay of this section, a British daughter of Mauritian immigrants, Claire Ratinon, traces the tangled threads of the colonial project to find and reclaim her own connection to the natural world.

The last section of the book, entitled 'Annex', offers a history of the art installation that spawned the book as well as a rich collection of photo essays celebrating new uses for greenhouses. This edited collection grew out of events that took place in Soleuvre, Luxembourg, which was designated a European Capital of Culture in 2022. The homespun look of this modest book with the use of bright orange ink for quotes, line drawings, and chapter titles makes the scholarship look less serious than it is. The editors clearly want this to be a working book that engages a diverse readership and incites action. While the inception was local, the reach of these stories is global. The book is an intervention rather than a coffee table book.

The editors of *Greenhouse Stories* argue that growing plants and food in the highly-controlled, seasonless interior of a greenhouse divorces us from the natural cycles of growing seasons and separates most people from experiencing first-hand the land which nourishes us. They call on readers to resist the allure of 'climate control' via the greenhouse. The writers featured in this volume argue that we can better adapt to the vicissitudes of climate change if, instead of relying on technology to counter its effects, 'our efforts concentrated on reestablishing sensitive and lively relationships with the living world?' (20) This is a book that is 'good to think with', as anthropologist Claude Lévi-Strauss would say. But more than that, it is a stylish, hopeful, keen-eyed, creative and insightful volume that deserves a wide readership.

Tamara Caulkins is a historian of science and environmental history based in Ellensburg, Washington. She has researched eighteenth century French naturalists such as George-Louis Leclerc, Comte de Buffon (1707-1788), Director of the *Jardin du Roi* and author of the forty-four volume *L'Histoire Naturelle*, and Michel Adanson (1727–1806), first French botanist to travel to Senegal. Her book on diagrammatic notations for court dance and military drill in the Enlightenment is under contract with Brill. She is also in the process of researching botanical conservatories to understand how they informed ideas about climate during the eighteenth century. She is a co-editor, with Geoff Bil and Kathleen Gutierrez, of a volume on *Plants in Translation: Global Diasporas and Local Entanglements* under contract with the University of Pittsburgh Press.

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