



Sheridan

Indeterminate Growth
Sam Cotter & Fraser McCallum

January 6 – April 17, 2020
Temporary Contemporary 2019/20
Sheridan College

All Things Considered: The Agency of Plants in Sam Cotter & Fraser McCallum's *Indeterminate Growth*

Valentyna Onisko

"Indeterminate growth" is a biological and botanical term referring to organisms that do not stop growing once they reach a genetically predetermined size. In contrast to *determinate* growth, plants exhibiting indeterminate growth may continue to grow unpredictably until interrupted by external factors. This concept is used by artists Sam Cotter and Fraser McCallum to explore the ethical and ontological questions related to the contemporary relationship between nature and technology.

On the surface, *Indeterminate Growth* looks deceptively simple: the greenhouse-like structure is composed of a CNC-cut plywood base, beneath a welded steel shell that houses over a dozen plants, of which several climb readily onto lattice supports. The vegetation is supported by irrigation and a programmed light system that elicits subtle plant movement over time. Situated in Sheridan's Trafalgar Campus Library among existing indoor greenery, the artwork remains a self-contained environment clearly delineated by a raised platform. The plants are further separated from their surroundings—each of the fifteen vines, shrubs, and grasses is contained in its own discrete planter—nestled into the base of the structure. The overall effect is one of order akin to traditional botanical illustration, or individual specimens carefully arranged in an Enlightenment-era cabinet of curiosities.

Contemporary art historian and curator Giovanni Aloï establishes a similar ontological relationship in "The Greenhouse Effects" (2019), where he notes that, like the cabinet of curiosities, the greenhouse emerged in the 17th century as a symbol of man's control over nature: both are intimately tied to the relationship between knowledge, power, and social status. He argues that while plants are integral to our survival in the everyday, they are

also potent markers of identity and culture. Through subverting the power-knowledge relationship inherent to the greenhouse, contemporary artists, he suggests, can challenge this historical trope and invite the viewer to consider the entangled roles that plants play in our society.

In *Indeterminate Growth*, the triangular gable structure of a traditional greenhouse gradually evolves into the shape of a dome, referencing historical and contemporary industrial greenhouse architecture. Notably, what we may think of as the defining feature of the greenhouse—the glass—is missing. If the greenhouse emblemizes nature tamed, *Indeterminate Growth* can be seen as a simulacrum, twice removed from nature, a simulation of an original that does not exist. Philosopher and cultural theorist Jean Baudrillard begins his treatise *Simulacra and Simulation* (1981) with a quote deliberately misattributed to Ecclesiastes: "The simulacrum is never that which conceals the truth—it is the truth which conceals that there is none. The simulacrum is true." By constructing a model of a greenhouse, without its defining functionality, Cotter and McCallum encourage us to reconsider what we believe to be true. Plant cultivation—and modern agriculture, in particular—is widely regarded as a marker of human progress.





What would it mean to question this premise, and how can challenging this view change our relationship to nature?

Like Cotter and McCallum's previous individual and collaborative work, the site-specific sculpture *Indeterminate Growth* is grounded in local historical and archival research. With their installation, the artists respond to Oakville's settler agricultural histories, particularly the town's industrial-scale plant cultivation in greenhouses during the 20th century. On the ancestral territories of the Anishinaabe, Haudenosaunee, Huron-Wendat, and Mississaugas of the Credit peoples, the lands which now make up the Town of Oakville were settled in the 19th century to become an agricultural hub, historically referred to as the strawberry capital of Canada. This legacy remains germane today with Sheridan Nurseries, a chain of garden centres, recently marking a century of continued plant cultivation in the region.

In considering this history, and extending it to see the greenhouse a symbol of environmental management, the artists ask: How can we maintain ethical stewardship of plants in a mediated environment? How do we respect the agency of plants, when cultivation

is often conditioned on instrumentalizing them? Capable of precisely manipulating environmental factors such as temperature, levels of light and shade, atmospheric humidity, soil moisture, and nutrient concentration, technologically sophisticated greenhouses are now able to control almost every aspect of the plant life-cycle. In *Indeterminate Growth*, Cotter and McCallum acknowledge that this desire for absolute control is "always incomplete—ecologies surprise, delight, or challenge us." For them, valuing plant agency and the indeterminacy inherent to natural plant growth becomes an ethical position.

Several art historians and critics have noted the rise of the popularity of plants in contemporary art. In her recent essay "Between Two Ferns," published in *Canadian Art*, writer and art critic Jaclyn Bruneau challenges the often unexamined political implications of the movement: "Houseplants are largely unquestioned as a commodity, though they are in fact political—harvested and extracted following colonial patterns, the very same ones, incidentally, that increasingly affect how we understand art" (2018). Cognizant of this contradiction, Cotter and McCallum's *Indeterminate Growth* aims to "reclaim the greenhouse as an infrastructure that can honour plants' capacities to delight and surprise." Through its focus on the unpredictable and slow nature of plant growth, it encourages viewers to pause and take note of the work's gradual evolution amid the day-to-day rush of contemporary life.

Managing Paradise

Patrick J. Reed

*Paradoxically, the utopian model of a tropical enclosed paradise contained the premonition of a future in which we would be painfully made aware of the finitude of the planet.*¹

– Giovanni Aloï

“Sparkling Ararat” reads the slogan on the blue glass bottles in which ARARAT GROUP, LLC exports natural mineral water from Armenia to the West. *Sparkling Ararat*. The phrase exemplifies consonance, demonstrates assonance, spans human history with economy. The effervescent *now* of “sparkling” aerates the dusty past of “Ararat,” lifts its alveolar repetition off ancient tongues and into contemporary, marketable vocabulary. Still, the aftertaste of its historical significance lingers, for Ararat names the mountain where some believe the biblical Ark moored after the Great Flood subsided.

What might it mean to drink water with Old Testament ties? What might it mean to drink water with ties to a world-destroying flood?

The message in the bottle is complex. Like the phrase that adorns its label, one can detect double meaning, extract a double substance from the serum. Both deal with a struggle for survival wherein death is the homeopathic ingredient to a life-giving substance: 1) the water in the bottle memorializes the flood narrative, with each sip, drinkers acknowledge Earth as contingent upon God’s mercy; 2) the water in the bottle symbolizes humankind’s domination over the forces of nature and acts of God. In short, the Flood is diverted to the dining table to lubricate thirsty mouths and facilitate repartee.

1 Giovanni Aloï, “The Greenhouse Effects,” in *Why Look at Plants: The Botanical Emergence in Contemporary Art*, ed: Giovanni Aloï, 129–140 (Boston: Brill Rodopi, 2019), 130.

According to biblical commentator Avivah Gottlieb Zornberg, the Flood and language share a primal relationship in Jewish mysticism. In *The Murmuring Deep*, her exploration of biblical subtleties, she writes: “Originally, God created the world in language: He said and it was. That original utterance, performative in essence, bears compelling authority; its effect is an action that exceeds mere statement. It carries implicit promises, which nevertheless God found reason, as the world changed, to regret.”² During a 2011 radio interview, she expanded upon her arguments, explaining that communication, connection, and “everything that saves the individual and the world from being closed up in oneself,” is lost in the Flood:

...the [Hebrew] word that’s used for Flood, *mabul*, is an idea of a surging mass of water, of confusion, of chaos. What happens in the Flood is that there is a return to a pre-created universe, to the universe before [...] without form and void, which means specifically then without language. In Hebrew, again, it’s very graphic. It’s *tohu va-vohu*.³

Tohu va-vohu—a morass without coherency except for that held on the Ark. If a parable were needed to demonstrate Giovanni Aloï’s assessment that an enclosed paradise foretells the limits of the world, then the tale of the Ark would suffice. The Ark preserves differentiation, names, discrete meanings, and singular forms within a floating box. It promises a purer existence mediated through human intervention and conceptualized via the language humans use to organize the Earth’s components.

It is a tale of human exceptionalism, which is why it resonates in the collective consciousness, irrespective of religious or secular philosophies. For example, Young Earth Creationists believe the world was truly remade after the Flood and is but a few thousand years old. They contend that human exceptionalism is a divine gift, braided into stewardship of God’s green Earth. Some adherents of evolutionary biology would contend that humans are the

2 Avivah Gottlieb Zornberg, *The Murmuring Deep* (New York: Schocken Books, 2009), 72.

3 Avivah Gottlieb Zornberg, interview by Krista Tippett, *On Being*, NPR, October 6, 2011.

most exceptional organisms on the planet, a status achieved after billions of years of natural selection. Their timeline, with an assist from the geological record, rivals the Young Earth Creationists' version and calls into question the credibility of the global flood saga, yet biblical rhetoric surrounds scientific endeavors, like the Svalbard Global Seed Vault.

Known as the "Doomsday" vault, the Svalbard Global Seed Vault "facilitates security conservation of seeds, comprising genetic material of importance for food and agriculture." In the event that a catastrophe, such as war, decimates one or more of the thousand-plus seeds banks worldwide, Svalbard can help recoup the loss.⁴ The project constitutes a "food ark" (as Charles Siebert categorized it in a 2011 *National Geographic* article), protecting the planet's food supply in what was considered a fail-safe storage site until reports surfaced in 2017 that water from unusually high temperatures, heavy rainfall, and melting permafrost—all the effects of global warming—had breached the entrance tunnel more than once.⁵

Constructing an Ark, it seems, is easier said than done, but the challenges appear disregarded by the determined. Take Answers in Genesis (AiG) group and Ark Encounter, LLC, who together operate a Noah's Ark-themed creationist amusement park in Grant County, Kentucky that "features a full-size Noah's Ark, built according to the dimensions given in the Bible."⁶ At 510 feet long, 85 feet wide, and 51 feet high, it is "the largest timber frame structure in the world," so they claim, and compliant with Leadership in Energy and Environmental Design (LEED) standards.⁷

4 Svalbard Global Seed Vault, "The Seeds," *Svalbard Global Seed Vault*, seedvault.no/about/the-seeds (accessed December 29, 2019).

5 Charles Siebert, "Food Ark," *National Geographic*, July 2011, nationalgeo.com/magazine/2011/07/food-ark (accessed December 29, 2019).

6 Answers in Genesis, "About the Ark," *Ark Encounter*, <https://arkencounter.com/about> (accessed December 29, 2019).

7 Ibid., "Largest Timber Frame Structure Named a Must See," *Ark Encounter*, arkencounter.com/blog/2016/01/08/largest-timber-frame-structure-named-must-see; Philip Kennicott, "Noah's Ark replica shows conservative Christians are embracing green building," *Washington Post*, January 5, 2011, washingtonpost.com/wp-dyn/content/article/2011/01/05/AR2011010505477 (both accessed December 29, 2019).

By contrast, Russia's BIOS-3, the European Space Agency's MELiSSA, and the University of Arizona's Biosphere 2, "a unique large-scale experimental apparatus housing seven model ecosystems" encased in 7,200,000 cubic feet of glass and "sealed from the earth below by a 500-ton welded stainless steel liner," exemplify secular, science-focused arks geared toward developing survival infrastructures in uninhabitable conditions, either on this planet or beyond.

Biosphere 2, constructed in the Sonoran Desert Region in the 1980s for research on self-sustaining space-colonization, today functions as a lab with a mission "...to serve as a center for research, outreach, teaching and life-long learning about Earth, its living systems, and its place in the universe."⁸ Its unique structure, mandate, and geographical location recalls experimental living plans from previous decades, notably Paolo Soleri's Arcosanti, a utopian project (also based in the Sonoran Desert Region) meant to demonstrate "arcology" a "radical reorganization of the sprawling urban landscape into dense, integrated, three-dimensional cities in order to support the diversified activities that sustain human culture and environmental balance."⁹ Typical of utopias, the idyllic Arcosanti never came to full fruition, though its construction began in 1970. At the time of writing, Soleri's answer to urban sprawl remains unfinished.

Somewhere between an amusement park and research center lies the Eden Project, a tourist destination in Cornwall, England. Biblical in name and scientific in nature, this greenhouse complex simulates tropical and Mediterranean climes within a series of geodesic domes, a design that also evokes utopian modes of living thanks to Buckminster Fuller's mid-century popularization of the dome as the home of the future. Eden Project suggests the greenhouse as representative of a nursed, sustainable future—an ideal future if one disregards the question: for whom or what is it ideal? Giovanni Aloï describes, in "The Greenhouse Effects,"

8 University of Arizona, "Our Mission," *Biosphere 2*, biosphere2.org/research/our-mission (accessed December 29, 2019).

9 Cosanti Foundation, "The Arcology Concept," *Arcosanti*, arcosanti.org/project/arcology (accessed December 29, 2019).



GALEX LEAVES

765500 of 1000 5.95

MAGNOLIA LEAVES

765210 10 lb. 7.45

765225 25 lb. 17.40

(NOT SHOWN)

18.35

15.90

GREEN LYCO

760010 10 lbs. 4.80

760140 40 lbs. 18.60

PREPARED ASPARAGUS

765600

Per 10 Stems 50 Bun.



COCO PALM FIBRE

768000 lb. 2.00



GREEN CYCUS LEAVES

760812 8x12 7.00 Per 100

761216 12x16 7.90 Per 100

761620 16x20 8.65 Per 100

762024 20x24 10.50 Per 100

762028 20x28 13.50 Per 100



RED RUSCUS

766010 10 lb. 22.00

GREEN RUSCUS

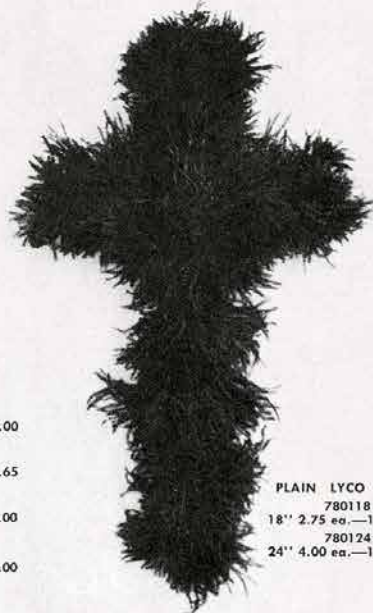
766110 10 lb. 12.65

SILVER RUSCUS

766210 10 lb. 15.00

WHITE RUSCUS

766310 10 lb. 15.00



PLAIN LYCO CROSS

780118

18" 2.75 ea.—1 Per Box

780124

24" 4.00 ea.—1 Per Box

WREATHS

2.25 2 Per Box

2.50 2 Per Box

2.75 2 Per Box

3.25 2 Per Box



769001 ARTICHOKE

Ea.75



769008 MIXED GRASS

Ea. 1.20



769009 RAT TAIL

Ea.90

NOT SHOWN

769025 CAT TAILS
NATURAL 30" LONG
Of 20 1.50



769003 BURR FLOWERS

Ea. 1.15



769015 LARGE YARROW

Ea. 1.75



769000 STRAW FLOWERS

Per 100 3.00



769050 TRANSPARENT OAK

Ea. 2.25



769016 SMALL YARROW

Ea. 1.15



769011 STAR FLOWERS

Ea.75



769007 SHORT ERYANTHUS PLUMES

Ea.90



769002 BUNNY TAILS

Ea. 1.15



769017 PAMPAS

Ea.90



769006 LONG ERYANTHUS PLUMES



769013 WHEAT

769005 CORDONE PUFFS

769012 WET TAIL

the inextricable link between greenhouse development, colonialism, and social engineering:

In Central Europe, during the first half of the seventeenth century, the term greenhouse began to denote a brick and mortar building with large windows used to shelter precious citrus trees imported from the Far East from the Northern European winter cold. Like the cabinets of curiosities and menageries of the Renaissance, these buildings were a matter for wealthy aristocrats and monarchs. The tropical species imported thereafter via colonial dealings required more light and warmth—with them came the necessity to build glass roofs and heating systems able to maximize exposure to sunlight.¹⁰

And later:

Botanic gardens educated city dwellers, reinforced nature/culture dichotomies, and shaped notions of national identity. It is also around this time that new agricultural processes, augmented by the accelerated rhythms of the industrial revolution, adopted the greenhouse, not as a place for aesthetic contemplation, but as one entirely dedicated to the intensive production of fruits and vegetables. Through progressive technological ameliorations, during the last century, extremely expensive and mastodonic geodesic domes set the greenhouse prototype model for educational/research institutions.¹¹

“Exotic” vegetal imports may have suggested global vastness, but their instrumentalization shrank the possibilities for under-

10 Aloï, “The Greenhouse Effects,” 129.

11 Ibid., 129–130.



standing plants as something other than an exploitable resource and a vehicle for ornamenting colonial domination. But to dispense with the greenhouse altogether for reasons of its unsavoury past would be an error. The greenhouse possesses too much potential as an object lesson in how paradigms are formed, how they can be remade and for whom. Shift the question of “for whom,” sow the seed of a paradigm shift.

Start a new conversation.

Tradition imagines the Ark filled with “every beast after its kind, and every domestic animal after its kind, and every creeping thing that creeps on the earth after its kind, and every fowl after its kind, every bird of every wing,” but on the matter of vegetal life, details from Genesis are scant.¹² There is a reference to food in chapter 7, when God instructs Noah to stock up on “every food that is eaten,” but little else.¹³ Speculations abound in Creationist thought as to the whereabouts of the green herb during the Flood. Practicality, if it applies here, grants the presence of a nautical garden

that both fed the human and animal passengers and preserved plant life. Common sense, if it applies here, suggests that seeds, spores, and the like could have traveled within the passengers’ bowels (biological waste on the ark is a category of speculation unto itself) or by clinging to hair and fur. Another line of thought posits that many plants would have survived the flood either buoyed by what was the debris of an annihilated world and/or as dormant seeds submerged in mud.¹⁴ This point finds support

12 Gen. 7:14 (HB).

13 Ibid., 6:21.

14 Robert A. Moore, “The Impossible Voyage of Noah’s Ark,” *National Center for Science Education*, ncse.ngo/impossible-voyage-noahs-ark;

in the final act of the Flood narrative, after the Ark runs aground on Ararat: “And the dove returned to him at eventide, and behold it had plucked an olive leaf in its mouth; so Noah knew that the water had abated from upon the earth.”¹⁵ The olive leaf originated elsewhere. Plants relied on their own arks, in seed form.

Plants withstood the wrath of God.

In plant life, light intensity, hydration, and temperature contribute to germination. Some seeds must pass through the digestive tracts of beasts or endure scraping, cracking, and abuse by the elements to initiate the process. Some must endure flame so the seedling might burst forth.

Imagine the Ark erupting, like a seed, with its own contents. All life on earth—gone. Imagine a bottle of water exploding—it would soak a tablecloth, slice a palm. An eruption of Ark Encounter, BIOS-3, MELISSA, Biosphere 2, or Eden Project would result in carnage. One could argue along a deconstructionist slant that language’s meaning is ever ready to herniate, a condition that some might call poetry. Poetry allows meaning to bulge, take on new forms, breach barriers like never before. If the world is made in language, then poetry promotes an internal revolt of its most exploited elements. The exploded greenhouse does the same, in ecological terms. No longer confined, the plants would be gloriously intermingled and plural, contra the legendary two-by-two protocol that saved the terrestrial animal kingdom. They would subsume the greenhouse of which only scaffolding would remain, for a time, as a memorial to subjugation overcome.

The exploded greenhouse is the driving force behind artist duo Sam Cotter and Fraser McCallum’s sculptural installation *Indeterminate Growth* (2020). Erected in the library of the Sheridan College Trafalgar Campus in Oakville, as part of the school’s Temporary Contemporary 2019–20 exhibition program, *Indeterminate Growth* consists of a metal armature evoking a greenhouse struc-

ture. Its poles and crossbeams support a series of LEDs that shine colored light upon a collection of climbing plants, which gradually grow onto the frame from a base containing an internal, hydroponic irrigation system.

Titled after a botanical term that refers to the continuous, unpredictable growth of certain plant varieties, *Indeterminate Growth* similarly encourages winding reconsiderations of human-plant relationships. To paraphrase the artists’ description, the project rethinks the greenhouse as a symbol of environmental management and in so doing engages the ontological and ethical questions inherent to artificial ecosystems. Facing such questions as “how can we maintain ethical stewardship to plants in a mediated environment?” and “how to respect the agency of plants, when cultivation is often conditioned on instrumentalizing them?” Cotter and McCallum arrive at a conclusion in which indeterminacy becomes an ethical stance.

As human viewers negotiate their spatial and conceptual proximity to the plants on exhibition, the plants negotiate their immediate environment, responding to the variable conditions of light, temperature, and humidity (all the factors important to germination). This *pas de deux*, enacted across radically different timelines, constitutes part of what the artists consider an interplay leading to interspecies awareness. Plant dance aligns tidily with the project’s most hands-off, chance-driven aspect. Again, the artists: “As daylight rakes over the piece seasonally, and grow lights turn on and off at intervals, plants are impelled to follow these changing lighting conditions. As a variable beyond the control of programmed lighting, daylight serves as another actor introducing chance into our choreographic regime.” The difference between human time and plant time is rendered in sharp relief, reinforcing the asymmetry of the conversation between plant and human while favoring, as Natasha Myers puts it, plants’ “where-withal to get interested and involved in worlds they actively make and unmake,” that is favoring, against convention, the slower of the two.¹⁶

Answers in Genesis, “Noah’s Floating Farm of Animals and Plants,” *Ark Encounter*, arkencounter.com/blog/2012/08/31/noahs-floating-farm-of-animals-and-plants (both accessed December 29, 2019).

15 Gen. 8:11 (HB).

16 Natasha Myers, “Conversations on Plant Sensing,” *Natureculture* 03 (2015): 43.

In order to reduce the effects of anthropocentric governance, the artists' focus on "how media technologies can help us see plants' responsiveness to their environments," as McCallum explained to the author. He described the sculpture as "infrastructural in that it sets some determinate conditions, but also leaves room for possibility. In addition, it operates in real-time only—visitors are challenged to attune to plant temporality, which is slower than the time-lapses [depicting plant movement] we're used to seeing."¹⁷ The visitor willing to stay all day will notice a progressive change of light from 6:00 am to midnight, as the grow lamps cycle through an irregular on/off schedule, all the while bathing the plants in color frequencies conducive to growth. The lamps perform a sort of encouragement light therapy for the plants, and, considering their function—to stimulate phototropism (plants' locomotive capacities to turn or lean toward sources of light)—double as a plant disco, strobing to a plant-rate beat.



Like the greenhouse that is its inspiration and the most direct target of its critique, *Indeterminate Growth* offers an object lesson in the formation of a paradigm, albeit one with conscious intent to honor unavoidable asymmetrical relationships. "Gardens are sites where people explicitly stage and restage their relationships with nature," writes Myers in *From Edenic Apocalypse to Gardens Against Eden: Plants and People in and After the Anthropocene*.¹⁸ "And yet," she continues,

even as gardens can be seen as collaborations among people and plants, this cannot be understood as a symmetrical relationship. Gardeners have *designs on* vegetal life. While there are always indeterminate effects of any design, especially in the context of the design of living infrastructures like gardens, the aesthetic and pragmatic selection, arrangement, and management of plants in a garden does set in motion particular forms of labor and care, and particular forms of governance that dictate who and what lives and dies within its enclosures.¹⁹

17 Fraser McCallum, e-mail message to author, November 22, 2019.

18 Natasha Myers, "From Edenic Apocalypse to Gardens Against Eden: Plants and People in and After the Anthropocene," in *Infrastructure, Environment, and Life in the Anthropocene*, ed. Kregg Hetherington, 115–148 (Durham, NC: Duke University Press, 2019), 125.

Cotter and McCallum's lesson plan is knowingly imperfect; the systems in place for addressing such issues as plant agency are

19 Ibid., 126–127.

incapable of transcending their own limitations—because those systems are anthropogenically bound by the limits of the human imagination—but the artists attempt to disarm this trap via the principle of chain reaction. One attempt to refine stewardship with a conscientious acknowledgment of plant agency will beget future attempts in perpetuity and raise the appreciation for vegetal being to as yet unseen levels.

In this way, *Indeterminate Growth* is an ark for a symbiotic age. Through its open framework (conceptual and physical) and its technoscientific stagecraft, the sculpture is divested of the mythos linked to the biblical vessel by way of the greenhouse. It goes so far as to provide its own flood in the form of concealed hydroponics so as to demonstrate viability and obviate the need for a legitimating, external force. Its “Noahs”—the artists—mark their days by pH levels, nutrient levels, and electric light. Their version of the ark requires dutiful care with a collaborative spirit; respectful maintenance for ecological betterment replaces preservation for human satisfaction in consumption. Here, plants are citizens of the world, not a passing detail in a moralizing tale.

After the great Flood of Genesis receded, Noah lost the godly authority he enjoyed as proprietor of the Ark, and he became a drunkard in his dismay. *Indeterminate Growth* advocates for a preemptive divestment of such hubris before the booze takes hold, and it promotes a sober invitation to consider the plants in all their versatility, tenacity, and necessity. May its voyage never end.

Image Credits

- 1: Sam Cotter & Fraser McCallum, *Indeterminate Growth* (detail), plywood, steel, hydroponic system, LED lights, plants, 2020.
- 3: Unidentified man in Dale Estate Greenhouse, n.d., Betty Odium fonds.
- 4–5: Chrysanthemums in a Dale Estate Greenhouse, c.1910–1917, E.A. Parsons fonds.
- 10–11: Calvert-Dale Estates Ltd., Florists’ Supplies Catalogue, 1967.
- 12–13: Two Workers in a Greenhouse, c.1910–1917, E.A. Parsons fonds.
- 16–17: Dale Estate Greenhouses in winter, c.1960.

Archival images courtesy Peel Art Gallery, Museum and Archives (PAMA).

Biographies

Sam Cotter and **Fraser McCallum** are interdisciplinary artists of mixed and settler Euro-Canadian ancestry living in Tkaronto. In their collaborative and individual works, Cotter and McCallum exhume recent histories, with a materialist focus on the media and technologies that have shaped the past and present. Both artists hold Masters of Visual Studies from the University of Toronto.

Valentyna Onisko is a Toronto based curator and art critic. Holding a BFA in Interdisciplinary Art from NSCAD University, and an MFA in Criticism and Curatorial Practice from OCAD University, her present research interests include the intersections of memory, hyphenated identities, and historical entanglements. She is the current Assistant Curator of Sheridan’s Creative Campus Galleries.

Patrick J. Reed is an artist and art writer. He is a regular contributor to *art-agenda* and a staff writer for *THE SEEN*, where he is the author of “Sonic Avenues,” a monthly column that explores sound as it arises in, emanates from, and occurs around art. His criticism is also featured in various publications including *ArtReview*, *ArtReview Asia*, *The Brooklyn Rail*, and *Spike Art Magazine*. He lives in Los Angeles.

Acknowledgments

Indeterminate Growth would not be possible without the collaboration and support of numerous students, staff, and faculty at Sheridan College. The artists wish to thank the following offices, faculties, and departments for their involvement:

- Creative Campus Galleries
- Facilities Management
- Faculty of Animation, Arts and Design
- Furniture Design Studio
- Human Resources
- School of Skilled Trades and Apprenticeship
- Sheridan Libraries
- Sheridan Production House

Sheridan

.....
Additional thanks to Peel Art Gallery, Museum and Archives:
Jacob Keszei, Nick Moreau
.....