4
Plants of Bondage, Limbo Plants, and Liberation Flora: Diasporic Reflections for STS in Africa and Africa in STS

Geri Augusto

Sou eu aquele que plantou
Os canaviais e cafezais
E os regou com suor e sangue ...
E nem a morte terá força
Para me fazer calar.[1]

—Carlos de Assumpção (1958), cited in de Camargo, Colina, and Rodrigues 1986, 53; italics in original

Whatever rocky soil she landed on, she turned into a garden.

—Alice Walker [1972] 1983, 271

I scattered seed enough to plant the land
in rows from Canada to Mexico
but for my reaping only what the hand
can hold at once is all that I can show.

—Arna Bontemps [1963] 2009, 95

African creativities are found in African mobilities.

—Chakanetsa Mavhunga

For some time, I have been interested in that often violent but also generative intersection of knowledge about plants among European colonizers, the indigenous peoples of Africa and the Americas, and black people enslaved in Europe's vast colonies, particularly on plantations in what the incoming occupiers at first deemed the "New World" (Augusto 2007, 2009). The literature about medico-botanical, agricultural, and other natural knowledge of indigenous peoples and of enslaved Africans and their descendants is growing, and these topics are now looked at through a variety of approaches, from anthropology to archeology, from environment to medicine. However, this literature is still not an integral part of a truly globalized history of science and technology, one which takes the cognitively just position that human societies and knowledges are coeval without having to be judged commensurate or that genealogies of contemporary technological imagination and innovation are also to be found in Africa and its diasporas. That different history of science and technology, emphasizing

what was creative, inventive, and put together differently—assembled or reassembled—by enslaved Africans and their earliest descendants, needs to be more intentionally generated and more explicitly interrogated.

I will take a recent project of *making*, the creation of an object and of a specific space—a seed assemblage and a small symbolic slave garden, both of which I recently researched and designed for Brown University's Center for the Study of Slavery and Justice (CSSJ)—as point of departure, a way of *visualizing* and remembering African diasporic botanical systems of knowledge and belief. I will use that work as a mediator in a conversation about knowledge and innovation from an angle less often considered, from the optic of persons once deemed not human. I will describe, discuss, and speculate about some of the spaces in which botanical knowledge from Africa was transplanted, reimagined, reassembled—alone or together with other knowledge—reinvented, or reworked in new spaces and contexts by enslaved persons and suggest that these spaces might also be productive locations for thinking about innovation.[2] With that aim in mind, I will posit some metaphorical plant categories. In doing so, I am informed by (but will not extensively rehearse here) a burgeoning set of archives about colonial sciences, indigenous knowledges, the material culture of plantations and of slavery, slave gardens, and maroon settlements (*quilombos* or *palenques* as they are known in Brazil and other parts of Latin America), as well as by Africana visual arts and literature. The latter references start right from the poetic epigrams with which this chapter begins, invoking what the enslaved wrought of fertile fields, rocky soil, and seeds with blood, ingenuity, and toil.

I am also impelled by the not easily describable pull of my ancestors and the experience of living in Angola (from whence came so many of the captive Africans brought to the Americas), as well as working in Southern Africa and Brazil. In these spaces, one African and one diasporic, I have taken many an *epistemic walk* through farms and botanical gardens first established under colonialism or its successor regimes.[3] Most recently, my thoughts have been stimulated by some of the conversations already being generated by the assemblage and the CSSJ garden. Those exercises in collectively thinking with a tangible object and a symbolic inscription in the ground, somewhat to my surprise, have taken off in multiple directions. Some have found them a touchstone for talking about the role of Native American crops and herbs in the early New England colonies. Others have been prompted to reflect on food heritage globally, on African and diasporic environmental ideas, on the relation between textiles and slavery, on the aesthetics of enslaved women's headscarves, and of course about future directions in the historiography of slavery. But for the purposes of this chapter, my broad arguments will be limited to two. I will assert that the ways in which enslaved Africans and their descendants created, adapted, used, and *thought* about plant knowledge in the Americas, under the most coercive and traumatic of conditions, constitutes one possible alternative genealogy for innovation and for technological imagination. I will also argue, mainly by demonstration of just a few of the possibilities for doing so, that at the intersection of STS and the interdisciplinary field of Africana studies might lie some critical resources for

reframing the knowledge of enslaved Africans and their earliest descendants in the diaspora as both ideas and practice, and we might arrive at novel ways to think about histories of technology that come from within a unique historical experience.

The terrains I will consider as spaces of knowledge and innovation in this chapter are threefold: first, those where enslaved Africans (and earlier also indigenous peoples) brought not just their muscles but also their expertise to the work of cultivating, harvesting, and processing crops that I will call *plants of bondage*, those plantations and estates throughout the "New World" which generated vast wealth in the Americas and Europe. The conceptual term itself is almost self-explanatory, once one stops to think of its direct implication. It is common knowledge that bondswomen and men produced cotton, sugar, tobacco, indigo, rice, cacao, and coffee. As the incorrigible runaway and abolitionist Henry Bibb, editor of the newspaper *Voice of the Fugitive*, put it in an 1852 letter:

> Now with all candour in answer to this proslavery logic, let me ask who is it that takes care of the slave holders and their families? Who is it that clears up the forest, cultivates the Land, manages the stock, husbands the grain, and prepares it for the table? Who is it that digs from the cotton, sugar, and rice fields the means with which to build southern Cities, Steam boats, School houses and churches? ... and yet they or their children are not permitted to enjoy any of the benefits of these Institutions. ... Oh! tell me not then Sir, that a man is happier and better off in a state of chattel bondage than in a state of freedom. (Blassingame [1977] 2002, 52)

What needs registering here is that bound up in perpetual servitude were knowledge and skills that sometimes resulted in new technological combinations for production of those plants of bondage. An exemplary and well-documented case is that of the tidal (mangrove) rice-growing system, the innovative creation of which on the West African coast dates back to the eleventh century (Fields-Black 2008). Centuries later, on Georgia's coastal plain, one environmental historian notes: "Planters and their [West African] slaves molded the lands ... that had proved useless to the first colonists into formidable units of production" (Stewart [1996] 2002, 89). Carney and Rosomoff (2009, 153) famously go further, calling rice cultivation in the Carolinas "not only the transfer of African seed to the colony, but the simultaneous migration of an entire African agricultural and processing technology by enslaved African rice growers." Future new histories on the other plants of bondage may disclose similar contributions by the enslaved, not just to the transformation of botanical landscapes in the Americas, but also to the agricultural technologies involved in doing so.[4]

The second space to which I wish to direct attention, in connection with mobile creativity and reinvention, is that of the life-saving and in some cases astonishingly productive gardens in the interstices of the plantation—the dooryards and small plots of the slave quarters and the provision grounds at the margins of the masters' estates, which Carney and Rosomoff (2009) have most aptly termed "botanical gardens of the dispossessed." Here, the enslaved raised what I will call *limbo plants*. These were a mix of plants carried over from Africa, including okra, black-eyed or cow peas, and sesame, among others; plants re-encountered in the

Americas after having already been adopted in Africa, such as cassava (mandioca) and corn (maize); and plants indigenous to the New World, nutritional or medicinal, and often at the same time simply aesthetically pleasing. More will be said of this category of limbo plants ahead.

Lastly, I limn those plants I have elsewhere called *liberation flora* (Augusto 2009), cultivated and developed in the free territory of maroon (*quilombola*, *palenque*) communities using the plant knowledge (especially agronomic) traditions and cultural templates of the enslaved, as well as those borrowed from the indigenous inhabitants of the region and from the plantation experience—the plants the enslaved could at last grow solely for their *own* provisioning, trade, and well-being as one concrete practice of self-liberation and resistance in landscapes they could refashion and control.

Clearly, these conceptual categories are not iron-clad; plants of bondage, such as sugar cane or rice, could and did show up as liberation flora in new free spaces, and limbo plants (e.g., tobacco or vegetables) likewise transgressed when relocated or sold for the slaves' own purposes.[5] Nor are they, as metaphoric notions, intended to erase now-indispensable scientific botanical names and categories, and the units of environmental analysis that are hegemonic in much of global knowledge practice. Rather, these concepts are used here to spark new ways of thinking about innovation, drawing from spaces where creativity was mobile and mutable by the hardest necessity and nonetheless connected to social life, human imagination, spirituality, and the practices of (or at least aspiration to) freedom, even among those who have been called "socially dead" (Patterson 1982).

In doing so, I take Mavhunga's (2014, 8) working definition of innovation: "The act of introducing something new, be it a method or a thing, either from scratch or from outside," including the capacities of ordinary people "to import and deploy things coming from outside" and assign the "incoming thing" new meanings and purposes. However, I am working with a particular case here, one in which captive Africans *themselves* were "incoming" and "imported." That requires us to think from a different directionality. Those captives carried their creativities internally across *kalunga*, the sea dividing the living from the dead in Kongo cosmology—mobility in the utmost sense. Besides this notion of mobile creativity, I also want to work here with a very old-fashioned understanding of invention—that is, Usher's notion of it as the emergence of new things from an "act of insight" which results from "cumulative synthesis" (Ruttan 1959, 600–601)—and suggest that it is a concept that, alongside innovation, might help further illuminate the plant knowledge created and practiced by enslaved Africans and their descendants. Invention, in this view, involves not just the intangible results of imagination, but also invention of processes and technologies in a *recombination of existing knowledges*. I argue that such recombination or cumulative synthesis has been one of the hallmarks of African creativity in the Americas, including with respect to the cultivation of plants in contexts rife with violence and threat, but also with the very human imperative to recreate, resist, and survive. We might conclude that trauma and resistance have *also* been the mothers of invention.

In the sections that follow, I will use the artworks I referred to previously that I created for CSSJ to help suggest some of the ways in which the plant knowledge of the enslaved might generate reconsiderations about innovation, drawing on the humanities (anthropology, history, art history, literature, cultural studies) and environmental studies for illumination. In my broader project, I am exploring further some of the newer research on the unique and underheralded contribution of key African plants to plantation economies, life, and culture in the Americas; recent studies of slave gardens and plots and other material culture on a few well-known, iconic US slave plantation sites; examples of plant knowledge that resulted from the interchange among enslaved Africans and the First Nations (Native American cultures) throughout the New World; and the historical records of plant knowledge in maroon/quilombola communities, particularly those analyzed in great depth under a veritable explosion of new interdisciplinary Brazilian scholarship on slavery. In this chapter, there is only space to gesture at this ongoing, larger work. Throughout, gardens are a focal point, plants and the contexts of their cultivation the epistemic object, and rethinking genealogies and notions of innovation from an African and Afro-descendant perspective the broad intent.

Performative Research and Visualized Knowledge: Cabinets, Gardens, and Patches

It will be useful to explicate briefly the assemblage constructed in an antique box for storing and displaying seeds and the symbolic slave garden. These were performative research, intended "not only to describe phenomena but also to enact possibilities" by attending to the ontological implications of *doing* and not just writing (Fisher et al. 2015). I wanted both the assemblage and garden to communicate differently from how a text might and to invite coproduction afterwards of the ideas and symbolic meanings they initially inscribe. To a great extent, this is what African and diasporic oral and artistic traditions do—a reverberating, imaginative, but space-effective flexibility that I would suggest is itself a facet of innovation and worth reclaiming as such.

Both artworks-in-the-making were deliberately thought of, as well, in apposition and opposition to two of the most important techniques for visualizing and taking back to Europe scientific knowledge and diverse artifacts obtained by virtue of expansion into Asia, Africa, and the New World: (1) *Wunderkammern* or curiosity cabinets and (2) botanical gardens. By the seventeenth century, Cook (1996) notes, all world-class universities in Europe boasted both of these among their essential mechanisms for knowledge production (see figures 4.1 and 4.2). Bleichmar (2006) argues in her work on Spanish imperial botanical expeditions to the Americas and the eighteenth-century botanical art of Jose Mutis that curiosity cabinets were a "conscious decision to present a pictorial alternative based on both scientific and artistic criteria."

Botanical gardens and "dry" herbaria were extensively used in the studies of nature conducted by Europe's "armchair botanists," who, as Whitaker (1996), Schiebinger (2004),

Figure 4.1a
Natural history museum of Ferrante Imperato of Naples.
Source: Ferrante Imperato, *Dell'Historia Naturale* (Naples, 1599).

and others point out, often conducted their visual examinations indoors in the comfort of private studies. Those gardens and herbaria, having incorporated plants detached from indigenous knowledge and contexts, generated countless dissertations and learned articles back in Europe (Augusto 2007). Moreover, some of the most famous collections of traveling scientists and physicians who returned home to consolidate fortunes accrued in the colonies not only graced their own private cabinets but also became the foundations of great museum collections of natural history. One of the best-known cases in point is that of the physician Hans Sloane's Jamaica collection, which became the core of the British Museum (Delbourgo 2010; Quilley and Kriz 2003).[6] Cook (2007) ties all these ways to represent and circulate knowledge explicitly to the rise of new sciences in Europe, which were actually, he argues, produced by hosts of people all over the globe, thanks to the new global European trading companies.

Figure 4.1b
Cabinet of Curiosities, 1690s, Domenico Remps.
Source: Museo dell'Opificio delle Pietre Dure, Florence.

In answer to the invitation to "make us something that will bring to life the knowledge of the enslaved" and my own wont to use plants as epistemic objects, I took the constraint of the CSSJ's very small backyard space—with neither the climate nor the room to plant crops of food or fiber—as a fitting injunction to trouble those earlier scientific visualizations of plant knowledge, as well as to honor the "tiny plots" or "huck patches" of the cabin and hut dooryards, where the enslaved planted and tended vegetable and root gardens.[7] Those patches supplemented a meager diet, even managing sometimes to yield a surplus sold at market, when slave-masters allowed, and were often bought up by the mistress for her own table (Heath and Bennett 2000; Heath 2001; Thomson 2008). In CSSJ's tiny garden are a few of the multipurpose flowering plants and medicinal herbs—including dandelions in profusion—that enslaved Africans in New England and elsewhere learned about and adapted, largely from Native Americans but also from the European colonists. I surmise that even those small patches of land had meanings that were not just utilitarian, as will be

Figure 4.2a
Padua Botanical Garden, 1545.
Source: https://en.wikipedia.org/wiki/Orto_botanico_di_Padova#/media/File:Orto_dei_semplici_PD_01.jpg.

elaborated upon ahead. Therefore, the garden harbors as well some objects resonating African symbols and underlying cosmologies that enslaved persons reconfigured, in myriad open and clandestine ways, across the different natural and built environments of the Americas. Notable among the symbolic features of the garden are two which appear still, one way or another, in African-American yard art in the South: bottle trees and *dikenga dia Kongo*, the circular cosmogram of the once-powerful West Central African kingdom (Thompson 1984; Fu-Kiau [1980] 2001; Martinez-Ruiz 2013; Cooksey, Poyor, and Vanhee 2013; Sills and Als 2010).

However, as I worked through how to visualize this subjugated plant knowledge born of trauma and duress, it seemed as well that additional aspects about the reinvention and reassembly of knowledge around all three categories that I used to think with—plants of bondage, limbo plants, and liberation flora—might also be suggested in a piece of visual art.[8] This I decided to attempt as an assemblage, using only seeds, pods, and grains plus a few objets trouvés on background panels of African cloth and fibers associated with plantation slavery (see figures 4.3 and 4.4 for more details).

"To Set Going Something New": Assemblages, Visual Arts, and African Reinvention in the Americas

The leap of imagination from plantations and gardens of whatever type to an actual outside garden, symbolic or otherwise, is less a stretch of visualization technique than the seed assemblage, so it may be worthwhile to burrow into the thinking behind this choice.

Figure 4.2b
Interior of the Great Palm House, Kew Gardens, 1852.
Source: Illustrated London News, August 7, 1852.

Assemblage is, of course, one of the most generative of STS tropes (Deleuze and Guattari 1987) to describe heterogeneous things or pieces of things—material, discursive, or both—in association with one another in a single context. However, the very notion of assemblage is also inherent in how the enslaved created and used their knowledge in the Americas. By taking a brief digression through Africana literature and visual arts, we can still use the term in its STS iteration but also give it additional meanings that may point toward other ways of thinking and talking about innovation, ways that put Africa and the African diaspora at the center of how we might construe differently the histories of plant sciences and technologies.

In art, an *assemblage* is "a collage incorporating material or objects other than paper and fabric," with objects predominating (Weiss 1979, 267). But for the artist Romare Bearden, a *collage* comprised "ritual or incantatory object[s]," extracting material from the world and

Figure 4.3
The seed assemblage "Plants of Bondage/Liberation Flora."
Source: Author.

then transmuting it, "turning so many scraps of paper into a novel physical form" (DeLue 2012, 11, 13). In assemblages that often invoke Haitian and African women's power as well as "the pull of ancestral past and its subconscious memory," the artist Betye Saars uses artifacts, found objects, and personal histories to create a visual dialogue in small spaces, giving these things changed meanings (Carpenter 2003, 28). Saar's assemblages, she avers, are "a process of transposition and appropriation"—a notion that might also suggest another way to think about what the enslaved wrought and thought in their gardens. Seeds, then, with their power to imply both (1) the work of planting and cultivation and (2) generative, contained energies opening up to the new turned out to make optimal objects for an assemblage of plant knowledge of the enslaved.

There are also older, African genealogies for the technique of assemblage as visualization of knowledge and memory practice, just as there are in many indigenous knowledge systems. A *lukasa* (memory board) made by the Luba people (in Central Africa, present-day Democratic Republic of Congo), for example, is an assemblage made of wood, beads, metal, shell ... *and thought* (see figure 4.5). Indeed, it has been termed by art historians as "the motherboard of Luba thought," an organizer of data, a cosmogram, a history of sacred locales and much more, reinterpreted by trained court historians as they run their hands over the board in a tactile practice that reactivates memory in the presence of an audience (Roberts 2011,

Figure 4.4
Aspects of the CSSJ slave garden.
Source: Author.

76). Mack (2003, 40–41) writes about lukasa as "thought retrieved from the intermediation of objects," objects that "articulate acts of remembering."

Notions of assembly and reassembly, acts of reinvention, translation, and innovation, abound in African diaspora literature and literary studies, as well as in discussions of African cosmological and sacred arts. This complex of ways to think about, make, and remake knowledge, prototypically the work of enslaved Africans and their descendants in the diaspora, I think of as *re/trans*. From this optic, we might pose a question: What if an "innovation journey" (Van de Ven et al. 1999) began in the dark, nauseating hold of a ship? Does not the reinvention of self as human, after that experience, and the transformation of less-than-optimal spaces into possibilities of survival, and even later thriving, count as innovation? The Caribbean scholar and poet Kamau Brathwaite ([1971] 1981) seems to think so, arguing that

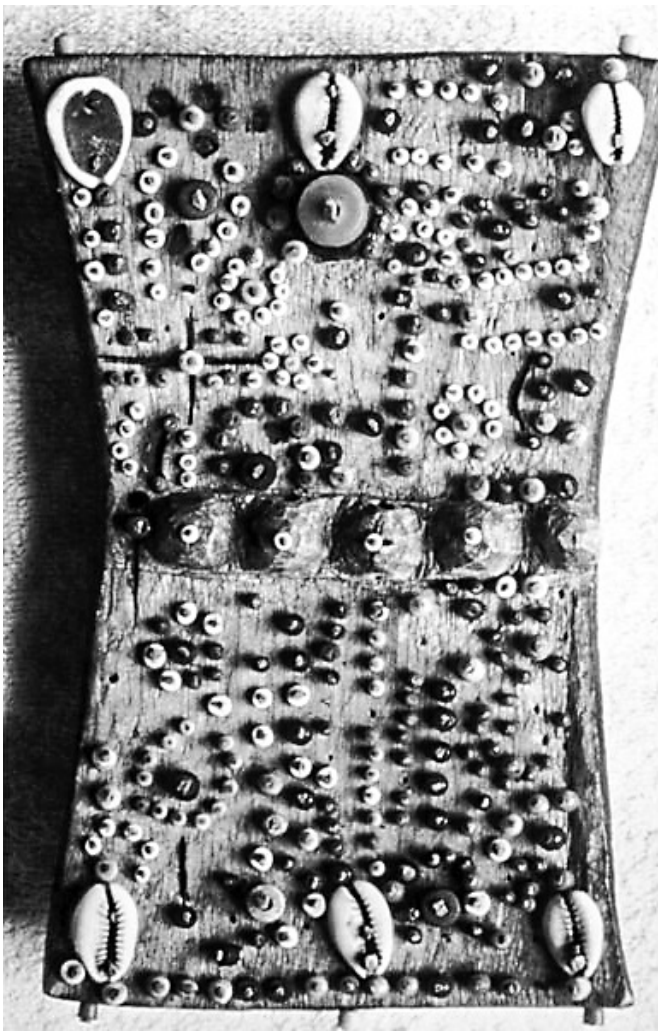

Figure 4.5
Lukasa.
Source: Eglash 1999, 166.

"the ex-African slaves and creole blacks in the Caribbean began from their first landings to adapt their African heritage to the new and changed conditions ... In the English islands at any rate, there was very little 'European' to adapt to" (6). It is important, Brathwaite continues, to study how enslaved Africans went about reconstructing lives from a "great tradition ... using the available tools and memories of [their] traditional heritage *to set going something new*, something Caribbean, but something nevertheless recognizably African" (6–7; italics mine). From this view, the infamous Middle Passage might be seen as "a pathway or channel between this tradition and what is being evolved, on new soil, in the Caribbean" (7). Monique Allewaert's (2013) provocative work of ecocriticism and "eco-poetics" on the ecological

personhoods created in plantation slavery and maroon/quilombola cultures suggests that assemblage allows for the crossing of temporalities and spaces and the combining of fragments practiced by the enslaved or newly free, as well as their "modes of inhabiting the colonies and colonial histories that depart from the logic of colonialism and the modes of redress possible within it" (100).

In a similar vein, the prize-winning Guyanese novelist and theorist of the imagination Wilson Harris ([1970] 1995), in his classic text *History, Fable and Myth in the Caribbean and Guianas*, introduced a new usage of the quintessential Caribbean dance *limbo*, which myth has it first arose on the decks of the slave ships, interpreting it as "the renascence of a new corpus of sensibility that could translate and accommodate African and other legacies within a new architecture of cultures" (20). Elsewhere, Harris suggests metaphorically that limbo is a "novel re-assembly" arisen from "a state of cramp to articulate new growth ... a creative phenomenon of the first importance in the imagination of a people violated by economic fate" (20–21). This limbo assembly in the New World, Brathwaite argues, is African, but also incorporates "Amerindian features," and draws on a veritable "syndrome of variables" of architecture and visual arts, but also of technologies, born of "a long duress of the imagination" (Brathwaite [1971] 1981, 29). Jamaican cultural studies scholar Stanley-Niaah (Osinubi 2009, 179) links limbo to "new sensibilities of survivalism" and the reconfiguring of space under conditions of domination.

Hence it is from this Caribbean concept of limbo that I borrow the notion of *limbo plants* to describe those food and medicinal plants grown in the small slave gardens on plantations under colonial racial slavery. These were instances, anthropologist John Vlach (1993) argues, of the enslaved creating an alternative landscape and territory "beyond their master's immediate scrutiny, at the margins of the plantation"—a creative, if survivalist, response to their "assigned environments" in spaces "*open to and characterized by movement*" (13–14; italics mine). "Slave initiative" in their half-acre or less gardens, observers often remarked, was highly productive. Vlach goes on to recount: "The space around the slave cabins was highly charged with social symbolism. In their gardens, the part of the [slave] quarters for which they were most responsible, slaves were most effective in establishing a territorial claim within the plantation's confines" (168). Often though, as some former slaves testified, a particularly productive patch simply was snatched away by the master, and another space had to be claimed and remade (Blassingame [1977] 2002). Yet through their own enterprise and inventiveness, the enslaved somehow "kept body and soul together."

Irregular Rearrangement and Imagination: An "Aesthetics of Resistance and Identity"

Imagination, inventors and scientists from Albert Einstein to George Washington Carver have often asserted, counts as much as knowledge in innovation. The writer Alice Walker ([1972] 1983) reminds us that for a long line of African American women, from slavery to now, gardens have been a space for giving rein to imagination and an urge to create beauty

otherwise suppressed under oppression. This is why, though it might at first seem counterintuitive that enslaved persons also grew plants for reasons of aesthetics and the will for an inner life beyond the reach of the lash or endless linear rows of commodity crops, I thought it important to include flowering medicinal plants in the CSSJ slave garden. They stand for that suppressed but indomitable urge to create for reasons of one's own. As art historian Leslie King-Hammond (2008) argues, in developing her notion of an "aesthetics of resistance and identity," such an aesthetics played out, among other ways, in gardens that focused on food and medicine but also included flowers:

> Surviving the American plantation system required enslaved Africans to locate spaces that were intimate and often obscure, where they could cultivate aesthetic sensibilities within and beyond the limitations of slavery. Enslaved Africans learned though ancestral memory, artistic innovation, and their own intellectual genius to identify safe and sacred "spaces of blackness" in order to resist domination and to protect their new sense of identity in the new world ... Some of these spaces were in their environments: their homes, gardens, communities and grave sites. (58)

Archival research on slave life and newer archeological and other studies of plantation material culture also note that the enslaved grew flowering plants for a multitude of purposes (Egypt, Masuoka, and Johnson [1945] 1968; Heath and Bennett 2000).[9] From the testimony of the enslaved in the WPA Alabama interviews, for example, it was clear that both vegetables and flowers were often planted in the slave patches. Tildy Collins, when contacted in 1937, was still living in her one-room cabin, with its "neat garden of vegetables and flowers combined, with morning glories trained carefully over the fence nearly all the way around" (WPA 1937, 83). The former slave Sam Aleckson testified that the crudely built cabins on the plantation in which he lived "had flower gardens in front of them" (Blassingame [1977] 2002, 255). Another ex-slave recalled poignantly from his childhood how each morning his mother, as she set out for an arduous day in the cotton fields, would let her eye linger a moment on her morning glory vines. It probably helped that some of the most useful plants for remedying illnesses, such as irises ("blue flags"), were also pleasing to the eye.

In his evocative introduction to a photographic essay on African American gardens across the US South, the swept yards in which they are often set, and the variety of containers they often feature, Lowry Pei traces these gardens back to those of the enslaved and their African ancestors. He goes on to describe their recurring "template" thusly: "Plants in containers as well as in the ground; used objects of all kinds, valued because they have been used and now appropriated for new purposes; circles; the color white; pipes, stones, shells; figures of human beings, animals, or birds; things that reflect or give off light, objects that refer somehow to wind, like chimes, pinwheels, and fans" (in Sills and Als 2010, xiv).

All of this, Pei continues, was built on irregular shapes, circles, and broken lines, forever open to rearrangement, "the opposite of formal European gardens," and with an underlying form which is "a set of values, a worldview," rather than a "perfectible product." That worldview, expressed on small plots of land, hearkens in part back to the mixed-crop polycultures

typical of African farming before colonial occupation and to a different type of environmental imagination now transplanted and reconfigured, under circumstances not of the enslaved persons' own making or control. Yet they made of those plots things useful for survival, small constrained assemblages inscribed on unfree ground, but which sometimes helped lay the path to freedom.

Liberation Flora

Thus the enslaved Africans and their descendants drew on African concepts of how spaces for food crops and useful flowering plants should be set up, even under limbo conditions. However, they were able to give far fuller expression to those now-transplanted models when they escaped and created their own free communities in the very midst of the surrounding slave regimes in what were for them new, if somewhat familiar, environments. Some of the most admiring assessments of the flourishing, highly productive gardens and fields of African maroon communities (also known as *palenques* and *quilombos* in Spanish and Portuguese-speaking American societies) come from an unlikely source: the reports and drawings of colonial soldiers and military officers participating in the hard-fought assaults that finally succeeded in routing out and destroying them (Price and Price 1992; Reis and Gomes 1997; Corzo [1988] 2003; Augusto 2011).

These descriptions, time after time, depict richly polycropped, ingeniously defended, bountiful fields and gardens. These were spaces in which food and agricultural systems evinced that "hybridization and intermingling of planting methods and foods" (Carney and Rosomoff 2009, 112), based on the food and agricultural systems of both Amerindians and Africans, that would have first appeared as limbo plants on plantations. Maroons ate variedly and well by all available historical testaments. There is little research yet on whether or not new patterns of work and ownership emerged in the maroon communities, but some scholars have already suggested (Ellis and Ginsburgh 2010) that this might have been another opportunity for re/trans—older templates and forms, adapted to new conditions, the hard experience of breaking bondage, and the opportunity to inhabit freedom.

New Genealogies of Invention and Innovation

Reflecting on the botanical knowledge and technologies of enslaved Africans and Afro-descendants through the novel conceptual categories of *plants of bondage*, *limbo plants*, and *liberation flora*, mediated by tangible artworks and some of the intellectual resources of Africana studies, allows us to rethink how innovation is in some cases shaped by a most peculiar set of historical circumstances and how the human impulse to resist also summons invention. For enslaved Africans and their descendants, survival, resistance, and freedom shaped how plants were known, cultivated, and used. They themselves were made mobile involuntarily under duress, and their knowledge traditions and cultural templates, and at

least a few critical seeds, came with them in a traumatic crossing of the waters. In the Americas, they developed new assemblages of knowledge and sowed them into differing landscapes, using knowledge practices we have captured here under the evocative rubric of *re/trans*. Given the centrality of racialized chattel slavery to the remaking of the modern world, the epistemic settings and practices in the production and reproduction of plant knowledge briefly interpreted in this essay should, we may reasonably conclude, constitute a critical part of more global genealogies and histories of innovation.

Visualizing in more engaging ways the ideas, cultures, and practices around plants wrought and reworked in the African diaspora by enslaved persons may open up conversation about innovation under extreme material difficulty and about making and remaking on the move while fighting for recognition of one's very humanity. That may be a good thing for the current generation of African and diasporic youth, who in many cases are fighting for recognition as well. Novel explorations of agrobotanical knowledge of the enslaved that use intellectual resources common to STS alongside those of Africana studies may also constitute another route to making STS more central to the study of Africa and the diaspora, and may help impel African knowledges from the margins to the center of the field. Whenever notions of creative mobility, assemblage, invention, and innovation are deployed in STS, shouldn't the Africans who were enslaved in the diaspora spring immediately to the mind's eye?

Notes

1. In this poem known in Brazil as the national hymn of the struggle for Black Consciousness, Assumpção writes, "I am the one who planted the fields of sugarcane and coffee, and watered them with sweat and blood ... And not even death will be strong enough to make me keep quiet" (my translation).

2. It must be stressed that I am not considering "Africa as a country," and I am cognizant of the diverse origins, societies, and cultures from which the oceangoing slave trades drew. Explorations of that diversity of plant knowledge more specifically by origin are not possible in this chapter, and such explorations are not its intent.

3. I first coined the expression *epistemic walk* in two talks: a March 2004 conference presentation on the useful plants garden at Kirstenbosch at the first South African Academic Colloquium on Indigenous Knowledge Systems in Bloemfontein, South Africa, at the University of the Free State; and an Africana Studies Department senior capstone seminar at Brown University in February 2005, entitled "Xhosa Hut and Palm House: Africana Knowledges, Space and Methodology."

4. Switching the directionality of African agronomic innovations back the other way for a moment, it is worth recalling the tremendous feat of adaptation and reinvention in technologies carried out with resounding success by African women farmers who took up the cultivation of the Amerindian plant maize, as McCann (2005) skillfully recounts.

5. As the former slave John Anderson declared when interviewed in 1861 from his new home in Canada, when explaining what his patch-grown tobacco went toward: "And in this way some acquired sufficient means to purchase their freedom" (Blassingame [1977] 2002, 353).

6. Delbourgo (2010, 113) argue:

> Strikingly, only in the last few years have scholars begun to examine the agency of the slave trade in circulating natural knowledge, suggesting the possibility of overcoming the long-standing notion that slavery and science had nothing to do with each other, and that the "social death" of enslavement denuded African migrants of all epistemic capacity. ... Treating Africans as subjects and actors in early modern histories of natural knowledge is a recent development. Scholars have now begun to raise pressing questions about Africans as active carriers and producers of botanical and medical knowledges, as collectors, expert cultivators, keepers of provision grounds, and skilled poisoners. The link between institutional science and the slave trade, meanwhile, has always been hidden in plain view in the British case, as demonstrated by the overlooked career of Sloane—the future Royal Society president and British Museum founder who gathered specimens in Jamaica.

7. I am indebted to the offer from CSSJ Director Professor Anthony Bogues to use my imagination in this way, which made it possible for me to undertake gladly what I consider the fulfillment of an obligation (*obrigacao*, as they say in the African-derived Brazilian religion of candomble) to my enslaved ancestors.

8. This work originally carried only two of the concepts in its title; the third, the notion of limbo plants, emerged later in the essay drafted for the MIT workshop that led to the present volume.

9. This notion of plants as inherently multipurpose, escaping labels such as *medicinal plants*, has been retained in many contemporary indigenous medico-therapeutic knowledge systems in Africa; see, for example, Augusto 2004.