

Introduction

SPATIALLY EXTENDING THE DIGESTIVE SYSTEM

In 1896, exactly a decade before William Keith Kellogg put his famous signature on the first Corn Flakes box, his older brother, Dr. John Harvey Kellogg, published a book called *The Stomach: Its Disorders and How to Cure Them*. In it he outlined his philosophy of nutritional health as practiced at the well-known Michigan retreat-clinic, the Battle Creek Sanitarium. This philosophy rested on a digestive reductionism, presenting ailments and diseases of all kinds as curable through the proper consumption and digestion of foods. Helping patients digest food quickly, cleanly, and accurately was the foundation for healthful living at the sanitarium. What are thought of today as staples of American health foods—soy milk, peanut butter, granola, yogurt, and of course Corn Flakes—were all either invented or perfected for mass consumption in the experiment kitchens of the Battle Creek Sanitarium. The sanitarium was, in Kellogg's words, "a university of health." It offered organized exercise regimens, an ongoing lecture series, and a rather odd battery of machinery including electric light baths, automatic massagers, and abdominal punchers that were meant to improve health. But above all, John Kellogg's message of health in the decades preceding the mass production and exportation of breakfast cereal was centered on digesting the right foods in the right way.

Digesting at the sanitarium, however, did not occur as a phenomenon confined to the insides of patients' bodies. It was, on the contrary, a very spatial—very geographical—process. When Kellogg centered health on the digestive system it meant, paradoxically, that the organs themselves had to be extended beyond the form of the body. Digestion could not happen without the aid of extracorporeal technologies, what today we might see as older types of biotechnologies. These late nineteenth-century biotechnologies came in the form of food-processing machinery, architectural environmental systems, urban sewerage, and agricultural implements for the mechanization of making food. Each of these biotechnologies happened in particular places. Fleshing out rich descriptions of those places shows us John Kellogg's geography of digestion, while at the same time demonstrating an instance of what literary theorist Stacy Alaimo has recently called "a sense of the subject as already part of the substances, systems, and becomings of the world."¹ It is important to recognize that "subjects"—sanitarium patients, in this case—are ever involved in greater environmental and technological systems. This book aims to demonstrate that being a biological human neither is nor has ever been achieved without an ensemble of other "substances" that can be mapped onto the surface of the earth.

A Geography of Digestion, therefore, outlines one significant origin of American health food-ism from the perspective of the body, and specifically the digestive system. With the meteoric rise of popular consciousness concerning the geographical origins of food in the twenty-first century, this book demonstrates another way to think spatially when we talk about food. Countless maps have been drawn showing where food is grown, how far it travels, or the labor injustices associated with growing food in distant places. But these discussions always stop when food reaches the proverbial kitchen, or plate. Though the topic of digestion has been approached more recently by food scholars, there remains an outstanding question concerning the geography of food once it has been ingested.²

To forge this other way of thinking about food spatially, the book connects the body with the landscapes, machinery, and urban infrastructures that emerged alongside John Kellogg's invention of the "modern stomach" in the 1890s, an invention that reflected state-of-the-art advances in nutritional and medical science. Yet, far from a set of organs confined

within the epidermal bounds of the body, the digestive system existed in other places. Without recognizing this we miss a major opportunity to clarify the particular relationship between food, body, and environment at a crucial moment in the emergence of American health food sensibilities.

Stepping back a little further, the book grapples with the question of how we are to understand the relationship between body and environment, an issue of increasing concern within the environmental humanities and health geography. Asking “where is the digestive system?” allows me to spell out in detail how environmental thinkers might start describing the thought that Alaimo captures in her notion that subjects are *already* part of the substances of the world. I believe that describing body–environment relationships in different contexts depends on the ability to create a clear picture of the tools and technologies available to the people living in that context.

Bodies at the sanitarium could have neither functioned nor healed as they did without the aforementioned technologies, all of which existed within the milieu of southern Michigan. All of these technologies became part of patients’ bodies as soon as they stepped off the train in Battle Creek and took their first bite of health food. This suggests that with careful study one can read the meaning and makeup of bodies from the landscapes that constitute them; interpreting landscapes tells us about our material selves as much as it does about the values and actions of a particular culture. The politics of this vision are, again, geographical. That is, in a concept of reality—an ontology—defined by the relationship between bodies and technologies, policy makers should be open to solutions that exist in places other than ground zero, so to speak, of any particular problem. When the solutions to health epidemics focus only on bodies, for example, it is possible that an entire map of potential places on which attention could be focused is lost.

As John Kellogg wrote in his definitive book on the subject of digestion, “it may truly be said that disorders of digestion are the most prevalent of all human ills . . . the great majority of diseases are primarily due to derangement of the digestive processes.”³ The stomach, therefore, was the focal point for Kellogg’s brand of healing at the sanitarium, much more consistently than the quirky experiments—like electricity baths or punching machines—for which he is sometimes known. But if we allow ourselves to

dive into Kellogg's world and his logic, it is apparent that the stomach could not have acted alone in bringing his patients back to health. For this we must look to the local landscapes in which digesting food took place.

In the ever-evolving conversation about eating healthfully in American culture, digestion has, and often still does, serve as a diagnostic tool for the quality and healthfulness of foods. Bad food gives stomachaches, indigestion, or, more seriously, Crohn's disease. Good food, on the other hand, quietly disappears into the fibers of the body without a fuss. Indigestion is such a common concern surrounding well-being that medical practitioners have discussed it for centuries. Digestion has remained a focal point for achieving health through the present, as well, with sustained medical attention on illnesses such as irritable bowel syndrome, or the procedure of fecal bacteriotherapy, in which healthy fecal bacteria are transplanted into a sick patient's digestive system.⁴ And yet the process of digesting food has only recently come under the purview of scholars in food studies.⁵ Digestion is so hidden, so seemingly contained within the body, that it begs to be categorized as a discrete process. But there is an environmental geography for digestion, too, just as there is a spatial-material story for any phenomenon.

Exploring this case from the vaults of American eating shows how technologies define the processes and the *locations* of digestion. Kellogg used steel dough rollers to invent flaked cereal, a food item that he thought was more readily assimilated into the body, thereby relieving the stomach from working too hard. The rollers were the first consciously applied prosthetic for the digestive system in American cuisine, the first intentional geographical removal of an alimentary organ function to another location. Kellogg sat on the Michigan state board of health for over ten years, helping usher in the town's sewage system, which altered the urban geography of digestion for his patients. In addition to these two instances, digesting food cannot be fully portrayed in this time and place without including the origins of the foods themselves, the agricultural economics that made the nationwide manufacture of breakfast cereals possible.

The invention of flaked cereal by the Kelloggs accelerated the deliberate technological intervention in the making of healthy bodies in Battle Creek and the nation at large. Based on John Kellogg's lifelong, if troubled, affiliation with medical science communities, and his obsession with

digesting food “properly,” flaked cereal was seen as the antidote to numerous ailments held by the sanitarium’s clientele. Kellogg designed flaked cereal with special precision so as to maximize the efficiency of digestion while minimizing discomfort and the debilitating effects of eating that were common in the nineteenth century. Problems with digestion in this period often resulted from eating food in which lived an overabundance of harmful bacteria, resulting in dyspepsia (a generic term for bad indigestion) at all levels of severity. Kellogg saw flaked cereals as a greater achievement than any food eaten directly from nature. But technological intervention in the manufacture of foods, and the entire process of digesting them, meant that the technologies themselves had to exist somewhere.

LANDSCAPE AS EPISTEMOLOGY

Machines outside our bodies act as extensions of the organs inside our bodies. Going beyond the *idea* of bodies existing in relationship with other technologies, how exactly *are* bodies extended into the world? Practicing health care must in part be geographical because under an ontology of spatial extensibility, health can be read from landscapes as much as it can be diagnosed from peering into bodies.

Bringing digestion outside the body—following what were really biotechnologies—means that a different set of research techniques are employed than would normally be when studying a biological process. In particular, two core concepts from cultural geography—landscape and network—guide the interpretation of the organs of digestion (including the stomach, intestines, and colon). The point of the project is to explicate how three technologies developed in southern Michigan—“pre-digesting” cereal rollers at the sanitarium, urban sewage infrastructure in Battle Creek, and agricultural machinery in the town’s hinterlands—were performing digestion for sanitarium patients. The small, unassuming town of Battle Creek becomes a perfect picture of the ways in which food, technology, landscape, and the making of healthy bodies came together in American history. This explication opens up a methodology for representing bodies that are materially and spatially extended beyond the epidermal borders of the skin.

It is important to recognize that even in the controlled atmosphere of a late nineteenth-century health resort, entire urban and rural landscapes full of rich, intertwined connections among people, objects, and ideas forged something as visually hidden and as taken for granted as digesting food. In building this geography, the abdomen is figuratively incised, unveiling a biological process that can be observed with the naked eye if one is in tune with the landscapes to which it is connected. Landscape in this way becomes an epistemology—or a way of knowing—that explains phenomena from the perspective of the terrestrial and the technological. As much as *actually* cutting the skin and peering into the digestive system, we can learn about the body by studying what it is connected with, or what sustains it.

Instead of seeing landscapes as material objects of study, we can see them as the gateways, or translators, to understanding other phenomena that may not appear to be associated with the landscape itself. Using landscape as an epistemology allows me to build up the idea of the extensible body—that is, a body that cannot be explained without understanding the landscape. One can, therefore—ideally, at least—read the digestive organs from the landscape. And more generally—crucial for geographical practice—one can start to understand a thing by looking *around* it, rather than *at* it. This means that as researchers and as curious people, we can come to know what appear to be singular objects by studying broader-scaled landscapes, the spaces in which we move around and touch. Landscape-as-epistemology brings the human experience in tune with the everyday scene.

The methodological move is to *begin* with the landscape, assuming that reading it reveals much about the object of interest. This method is vastly different from one that begins with the digestive system. Starting there would leave a researcher focused on volumes of scientific publications that debate the best practices of digesting food and treating digestive disorders. The researcher would hone in on the minutiae of bacteria, acids, and blockages, referencing other body systems but seldom lifting his head to take a wider view outside. That the surrounding local landscapes might play a role in the process of digestion, and even in the *making* of the organs, demands—from the perspective of medical science—a radically

different approach. Beginning with the landscape to investigate the digestive system assumes from the start that *where* this particular, historically significant style of eating happened had a lot to do with *how* it happened. To embark on this historical-geographical investigation at square one with a view already backed away from the body means that this book contributes to discussions going on in a variety of academic corners, including food studies, cultural geography, network theory, new materialism, and object-oriented philosophy.

To see how this methodological approach is useful, consider other fields of environmental studies. For example, work in environmental history and environmental justice shows that the health of landscapes is connected to the health of bodies. In this vein, scholars have used toxicity as a framework to demonstrate the ill effects that polluted landscapes have on the health of disenfranchised populations.⁶ Poisonous industrial waste, in this way, is used by environmental health scholars not unlike the way barium is used by present-day health-care professionals. To explain briefly: in a common method for tracking the movement of material as it courses through the body, doctors will sometimes instruct patients to swallow a liquid containing barium, which is then observed via x-rays. In this diagnostic procedure, the dispersal of a single element—barium—is visualized as a proxy for how the body circulates material. Just as barium uncovers metabolic processes at the scale of the body, scholars in environmental studies have used toxic quantities of elements—including diethylstilbestrol (a synthetic estrogen) and organochloride pesticides (e.g., DDT), among others—to track the metabolism of these poisonous chemicals as they course through the scale of the landscape and, of course, people's bodies. Rachel Carson's *Silent Spring* is foundational in this type of environmentalist thinking, from which there has developed a strong sense that the environment *as a thing* matters because it affects people and other living organisms. The pump is primed, therefore, to develop methods by which those effects can be described. But the newness of this method is that the effects must be described in an intellectual ferment where the very categories of nature, human, and artifice have merged, where "environment" and "technology" are not singular things, but already part and parcel of being human.

WHY DIGESTION?

The material meeting point of the outside world with the human body is the digestive system. Critical observers of agriculture will know that from the seed itself, as edible plants emerge from the soil they are brought into a system designed by people, and the effects of those designs are legible through their journey “from farm to table” and all the way to the inside of the body.⁷ The digestive system, therefore, is a critical nexus on which to focus—one that promises to efface the boundary between body and landscape. Eroding the division between inside and outside suggests that landscape *is*, or at least under certain circumstances *can become* the body itself, and that when we utilize technologies to remake landscapes we are undoubtedly remaking populations of people as well.⁸

Scholarship in food studies can be divided into two major camps. The first are works on food production, which have tended to focus on agricultural technology, farm labor, political and economic analyses, commodity chains, and alternative agriculture. The second are works that explore food consumption, the emphases of which have been more on culture, race politics, affect, taste, health, and anxiety. The former camp has a particularly material bent to it, using concepts of landscape and environment as pillars in its approaches, while the latter group looks to social theories to understand why people eat what they do, and what it means in a greater political context. Digestion brings these two schools together.⁹

The implicit and powerful insight from the work of environmental scholars who study toxicity and health is that the landscape-body relationship is a fundamentally material one, where danger comes in the form of (frequently invisible) objects. Topically, toxicity plays only a supporting role in *A Geography of Digestion*, and yet the project nonetheless explicitly furthers the toxic-environment research agenda by describing the mechanics of how technologically modified landscapes become the body. To do so requires—as has just been hinted at—an “object-oriented” approach, where the spatial boundaries of objecthood are taken under investigation. This method—a blend of regional geography, actor-network theory, and object-oriented philosophy—clarifies what the objects being connected are, but it also goes further, theorizing the very constitution of those connections.¹⁰ By doing so, my method in this book gives theoretical

and practical juice to the present environmentalist agenda. To put it simply, we know that the objects (e.g., toxins) that exist in an environment affect other objects (e.g., people) that are nearby, and yet what lacks is a way to describe how those objects become materially connected in space. One major aim of *A Geography of Digestion* is to show an example of how this might be accomplished using historical-geographical description.¹¹

This re-presentation of health food's past points toward a new method that uses the relational materiality of actor-network theory in the cradle of regional, geographical description. Actor-network theory has brought into focus the idea that phenomena (e.g., digesting food) are multi-object, and multiply placed, events. Geographical description brings a subjective, artistic practice to bear on communicating what those multiply placed phenomena look like. The melding of these two approaches yields an important method because it actualizes ideas about how networks function, a topic of great interest to political ecologists, environmentalists, and spatial practitioners concerned with materiality. The theoretical conclusion is that by using landscape as an epistemology—that is, by using landscape as a way of knowing how digestion works—then the way objects (like stomachs and sewers) are *related* becomes instead an issue of how one is an *extension* of the other.

A Geography of Digestion takes a case from the past that, on the surface, has nothing to do with biotechnology, landscape, or even digestion, and has everything to do with American cuisine, health food, and a moment in the small-town, nineteenth-century Midwest that spurred a revolution in eating. The work remains equally focused on the locale of Battle Creek, using its urban and rural landscapes as drivers in the building, or assembling, of this very spatial, very material network of digesting food. As this approach facilitates an investigation into what it means for entities to be “related,” my aim is to wield this method to build a way of thinking such that object connectivity is a given.

JOHN KELLOGG AND BATTLE CREEK

In his long career, John Kellogg published hundreds of articles, pamphlets, and books, summoning a tidal wave of ideas, propositions, hypotheses,

conclusions, statements, and advisories. His prolificacy leaves plenty of room for variation in the quality and cohesiveness of the oeuvre. Reading Kellogg long enough, one is bound to find competing fact claims at one point or another. Sometimes these discrepancies have a logical historical progression to them, while at other times Kellogg appears to be saying whatever makes him sound authoritative in the context of the conversation or his present audience. Reading the lifework of someone who incited a lasting global corporation by ceaselessly operating at the highest level of productivity, it would be impossible to represent everything that Kellogg wrote throughout his life in one book. However, in going through so many of his publications, it is clear that a lasting tenet in Kellogg's overarching goal of promoting health was about designing foods and designing bodies so that they fit together seamlessly.

Unlike many of Kellogg's contemporary health reformers, Kellogg did not believe that human bodies had ever had a pure relationship with food. Rather, in his estimation, that relationship was broken from the start. Modernity was not creating the problem for Kellogg—with its processed flours or packaged breads—but rather is where he found the solution. Food and bodies could both finally be made in a way such that they complemented each other, solving sickness, degeneration, and disease. This was squarely, as Foucault would have it, a biopolitical project.¹² By breaking apart and categorizing the process of digestion into pieces, then outsourcing those pieces to various infrastructures and technologies at different geographic scales, Kellogg aided in the control of people's bodies by the institutions that managed the technologies. In some cases, the Kellogg corporation itself changed the course of what it meant to be healthy, while in other cases the urban, state, and even federal government's policies on sewerage, land tenure, and nutrition were responsible.¹³

The first part of this book is a history of John Kellogg and the Battle Creek Sanitarium, focusing on his scientific approaches to eating and digestion.¹⁴ The second part of this book moves through the landscapes in which Battle Creek was situated. The traverse is scalar in nature, meaning that it starts closest to the modern stomach itself and moves outward, encompassing first the city of Battle Creek and then the agricultural hinterlands of southern Michigan. This spatial narrative draws a clearer portrait of what had to happen away from the dinner table, and outside the

patient's direct experience at the sanitarium, in order to make Kellogg's method of eating and digesting food possible. This approach assumes nothing about the appearance of foods in front of patients. Where was the food grown? How did it arrive at the sanitarium? What were the conditions in the fields that enabled the Kelloggs to acquire foods at an affordable price? Further, the approach assumes nothing about where the food went after it was digested. Healthy digestion for Kellogg did, after all, require the frequent expulsion of waste from the body. If we are concerned with the implications of studying digestion within food studies, then we must also consider the pathway of human waste—with all of its public health and built environment implications. By carefully studying how food was made, eaten, digested, and disposed of, the categories of inside-body and outside-body break down, giving way to a space produced by the extension of objects to one another.

FOOD AS MEDICINE

Kellogg's new system of eating was determined by his own scientific research on the efficiency and nutritional benefits of a wide range of vegetarian foodstuffs. His laboratory program emerged alongside the work of the government nutrition researcher Wilbur Atwater, whose dietary charts Kellogg emulated in the sanitarium's publications.¹⁵ Beginning with a deep understanding of the anatomy of the digestive organs that he gained from medical school training in the 1870s, Kellogg spent most of his career attempting to advance an ever-more-nuanced gastroenterological knowledge base. How the body took on the beneficial elements of food, and how it eliminated waste, were profound markers of one's overall health. The contemporaneous development of the science of eating and the science of digestion resulted in a philosophy of health wherein Kellogg used food as a medicine to cure ailments across the board, from cholera to skin rashes to depression.¹⁶ As his research findings grew in number and complexity concerning the relationship between food and the bodies of his patients, though, he increasingly expected more from the food items. By the early 1890s—about fifteen years after Kellogg assumed directorship of the Battle Creek Sanitarium—there was no food from nature that could

affect the body as precisely and as effectively as could the foods that he himself crafted.

In a move that would introduce a new way of eating to the American public that was reproduced with little restraint until the 1960s, Kellogg sought to replace nature with technologies. The pattern of packaged, mass-produced food that Kellogg started—still today widely available in supermarkets—was marketed as safe, nutritious, non-perishable, and tasty. Packaged and preserved food is commonly associated with mid-twentieth-century American cuisine, though it finds its strongest roots in Kellogg's philosophy and business practice.¹⁷ To make foods that most perfectly fit how the body's digestive system functioned, and therefore most perfectly cured his patients, meant that Kellogg's pharmacological use of foods, as it were, needed a pharmaceutical company to make the drugs. The interventions Kellogg made with food-making machinery resulted in designer foods, yielding what in his system of health were antidotes to problems such as putrefaction and auto-intoxication, the root causes for a host of crippling diseases that began in the stomach.

Now, over a century after Kellogg's prime, prevailing thought toward the digestive system's ideal state has undergone an about-face. Instead of the sterile, abacterial stomach that Kellogg prescribed around the turn of the twentieth century, there are now movements that attempt to *cultivate* bacteria in bodies through probiotic programs.¹⁸ Kellogg popularized the idea that one's own food acquisition and cooking techniques could never eclipse the health benefits of foods that were manufactured under the banner of nutritional and digestive science. The positive public reception of this stance is demonstrated by the sudden proliferation of health food companies in Battle Creek and beyond in the late 1890s, as a copycat economy sought to fulfill the demand for foods manufactured with a specific purpose for generating greater health.¹⁹

The technologies that Kellogg used to remake the relationship between bodies and food inflected what American cuisine would become in the first part of the twentieth century. These were foodstuffs that had been fortified with the knowledge of chemistry. These were the items in the modern American cuisine that could not escape the gaze or the meddling hand of the technician, who proceeded to redirect nature's edible bounty into something much more functional, safe, and nutritious.²⁰ This is the

cuisine against which its antithesis—organic farming—has now popularly railed for decades. The ethos of organics has been to stop the meddling, measuring, and analyzing, instead practicing a trust in foods that are imbued with the irreproducible power of nature rather than the fleeting folly of human knowledge. But the strength of this reaction demonstrates the overwhelming strength of previously prevailing cultural attitudes toward food safety and nutrition that were borne from technical interventions like Kellogg's.

TECHNOLOGIES OF DIGESTION

Three technologies shaped the digestive system, and therefore health, for Kellogg. The first technology was a series of industrial kitchen tools used to make flaked cereals. The Kellogg brothers heralded their cereal-flaking process as one that would yield the single food product most prepared for digestion. And the tool that most singly accomplished this was a set of 8-by-24-inch steel rollers. Used originally to crumble large, dry pieces of baked granola into bite-sized pieces, the Kelloggs repurposed the rollers as flatteners of moist, dough-like globs of wheat mush. This flattening process, once perfected, would make flakes that could then be baked in a way that most effectively converted their natural starches into dextrin. Up to this point in 1894, the Kelloggs had already made dozens of baked food products, always believing that high oven heat healthfully transformed grains into sterile food suitable for human consumption. But the shape of the grains being baked—the flake—is what made possible the most complete conversion of starch to dextrin, and therefore the food most prepared to “prompt assimilation,” as John Kellogg put it in an 1894 advertisement for wheat flakes.²¹ To Kellogg this meant that the body's digestive organs could do the job he thought they were supposed to do—that is, to find and incorporate the valuable elements of foods while eliminating the nonvaluable ones—without the grinding, painful, and even harmful duty imposed on them by imperfectly conceived and engineered foods. The rollers, therefore, are one instance of the outsourcing of the toil of the digestive system to a place outside the body. The mechanical work of the rollers relieved pressure from the body.

For Kellogg, it seems that this was a modern technology solving the age-old problem of indigestion and its cascading ill effects. Equally plausible, however, is that it was a modern technological solution in search of a problem. In this case the invention of a food product, an object made for alimentary consumption but one that existed outside the body, needed a problem that existed inside the body. The search for a problem to solve brought Kellogg to the conclusion that his own culinary-technological tinkering had outpaced the digestive system. To bring the digestive system into the same league of progress represented by his foods, Kellogg needed to join the two; he needed to bring the outside in conjunction with the inside so that his technologically advanced foodstuffs had a problem to fix.

The roller machines—as well as the ovens, baking trays, and other kitchen implements—were originally housed in the experimental kitchen of the sanitarium; then, after production increased, they were moved to the Sanitas Food Company's factory in Battle Creek. The second technological intervention in the process of digestion—the erection of the town's new sewer system—though, happened somewhere else. If chapter 3 is about the material making of efficiency in the body's digestive organs, then chapter 4 is about the material effects of that efficiency. Kellogg promoted a thrice-daily evacuation schedule for his patients, such that each meal prompted a clocked turnaround from food to feces. The great, underground sewers in the largest European cities began functioning as early as the 1850s.²² But selling such a dramatic revolution in public health, especially across continents, was not always easy. And so it was not until the late 1880s that the southern Michigan town of Battle Creek began implementing its own sewage infrastructure, relying before then on cement vaults, privies, bedpans, and outhouses. Great debates raged at this time, not only in Battle Creek but throughout towns in Michigan and the United States, over issues such as disease vectors, the role of soil as a filter, and the power of noxious odors. Whether you believed sewage was etiologically dangerous because of its foul-smelling fumes or because of microscopic life-forms called bacteria, urban populations increasingly sought to remove themselves from their own waste as the turn of the century approached.²³

The most cogent salesmen for this expensive infrastructural revolution, though, were the ones who could show constituencies that sewerage was

filled with harmful life-forms that, if ingested, were directly responsible for myriad diseases such as cholera, dysentery, and typhoid fever. And among the most cogent of these salesmen in all of Michigan was none other than John Kellogg. Kellogg brought his medical training to bear on the microscopic analysis of human waste. If food contained bacteria such that it needed to be blasted with oven heat to sterilize it, then human feces were far worse. In the 1890s all bacteria was bad bacteria for Kellogg, and he spent a great amount of energy showing this to Michigan's state board of health, serving as an active council member for over ten years. Kellogg's logic of efficient movement of food through the body to avoid self-, or auto-intoxication, as it was called, was mirrored in his support of constructing water-carriage underground sewers in Battle Creek. The efficient removal of waste as it coursed through the urban landscape was as hidden as the movement of food through the body. In chapter 4, then, the sewer system is investigated as the next phase in the geography of digestion. It was the material consequence of a bodily process, one that was also outsourced to a landscape that can be read as an extension of the process itself.

While John Kellogg played a part in bringing the sewerage system to Battle Creek, he was involved less directly in that technology than he was with the grain rollers. Many other actors—including engineers, construction workers, and public officials—are players in the story of sewerage as well. As we move farther and farther away in space from the bubble of the sanitarium, Kellogg's immediate role continues to decrease. This is not to say that the third and final technology had less to do with how digestion functioned in Battle Creek. Rather, it is to point out that as we follow a transect away from the sanitarium, through the town and into its agricultural hinterlands, it becomes clearer why this book is best conceived as a *geography* of digestion. Maintaining a focus on digestion as a spatialized biotechnology is a matter of following the technologies that affected the body into the surrounding landscapes.

This suggests that landscape is the geographical tool that, when put into conversation with network, becomes an epistemology of the digestive system. And so, in chapter 5, the machines of agriculture are investigated as biotechnologies that—whether Kellogg recognized it or not—affected how digestion happened at the sanitarium. The chapter shows that two seemingly disparate spheres of society—the pharmacological consumption of

food by American bodies, and the mass production of crops on American farmlands—were undergirded by the same intellectual thrust of the time that looked to chemistry for a way to maximize efficiency and production, both for bodies and for land. One outcome of this chemical knowledge was the production of food that was further transformed by cultural interpretation (Kellogg's, in this case) and turned into health food. The crucial point where agricultural science and nutritional science met was the stomach. In chapter 5 we see how midwestern agriculture in the late nineteenth century was becoming increasingly mechanized, reliant on science, and large scale, able to produce the grains en masse that would cure the ailing modern stomach as prescribed by John Kellogg at the Battle Creek Sanitarium. Grain-threshing machines form the basis of the conversation in chapter 5, as two agricultural manufacturing companies operation out of Battle Creek—Advance Thresher and Nichols & Shepard—designed farm tools that were shipped around the Midwest and the world. To cure the stomachs of people beyond the sanitarium, John and Will Kellogg needed access to an agricultural economy that supplied them with cheap grain. The transformation of the richest soil in the world into an agricultural beehemoth happened with no small thanks to the machines engineered in Battle Creek.

And so we have a picture of an emerging network of objects that come together to create a singular phenomenon—the digestive system. Seeing the digestive system as a phenomenon implies that it is a happening, a coming together, rather than a singular item, or what we would usually call a body organ. In the context of this study, I prefer to call the digestive system a biotechnology because the constituent parts that comprise this “posthuman” organ have a distinct spatiality. This space, or geography, of the digestive system is defined by the bounds of a network, one that exists in local landscapes. Reading these local landscapes allows us to peer back in time and witness the digestive system. In her landmark introduction to posthumanism, literary critic Katherine Hayles sees the “body as the original prosthesis we all learn to manipulate, so that extending or replacing the body with other prostheses becomes a continuation of a process that began before we were born.”²⁴ This always-ever type of prosthesis is part of the theoretical foundation of *A Geography of Digestion*. In this book, though, the idea of a body stretching, or extending, into space is removed

from the imagination and mapped onto the real landscapes surrounding Battle Creek. This is a geographical move that has not been thoroughly developed in posthumanism research.²⁵ Environmental-political theorists Diana Coole and Samantha Frost have pointed out helpful directions, too. In their essay on new materialisms, they ask what the place of embodied humans is within a material world in an era when the reprisal of materialism must be “radical.”²⁶ *A Geography of Digestion* is a method and case study for addressing this question.

BETTER FOODS THAN NATURE

The main historical insight of this book is that through his calculated, rational way of making foods, John Kellogg popularized and nationally exported the concept that science could make better foods than nature. Furthermore, he exported the notion that the human body was not prepared to incorporate nature’s bounty—vegetable or not—without precise technological intervention from experts in medicine, agriculture, public health, and nutrition.²⁷ In this view, American cuisine is defined less by a spread of foodstuffs and more by a relationship to food characterized by mistrust in the body’s capacity to manage, distribute, and evacuate—in short, to digest—food in the most healthful way. That the food counterculture had something to react against is in large part, I believe, a result of Kellogg’s mistrust in the body’s nature.²⁸

Food scholars have tended to overlook this point because of the association commonly made between Kellogg and the greater health reform movement, a Protestant-based, pseudoscientific social movement that promoted simple, bland, unadulterated tastes in food, sex, and dress. The health reform movement, that is, has been a red herring for interpreting the purpose of Kellogg’s health foods. So, although he may have started as a foot soldier in the ranks of mid-nineteenth-century reformers—taking cues from the likes of health proselytizers Sylvester Graham and J.C. Jackson—Kellogg’s relationship with the movement took a dramatic turn when he embedded himself deeply in the cause and methods of medical science. This commitment to the scientific understanding of digestion and nutrition, coupled with his rich background in Protestant health reform, meant that

Kellogg perpetually walked a tightrope between these two worlds. While the arc of his career (from the 1870s to the 1920s) trends away from the religious and toward the scientific, he never quite stopped leveraging this bimodal approach to appease as many patients as possible.

Because of this, I believe, Kellogg's legacy reflects the light of fame as much as it absorbs generations of ridicule. He alternated between research deemed progressive by the gastroenterological branch of the American Medical Association, and seemingly prank-like cures (e.g., electric water baths or abdomen punching machines) that irrecoverably twisted health reform philosophies in the popular imagination.

CONCLUSION

It is more accurate—as well as more environmentally informative—to know objects as processes involving many other objects. To ratchet up the potency of this claim—and to apply it to the phenomenon of eating food—is to acknowledge that “the digestive system” as such cannot exist, but that the thing we call the digestive system is the collapsing of myriad technologies that exist in a new type of spatial relation.

There are two paths one can follow in order to frame the geography of objects. One is to follow the spatial and historical threads of particular things, mapping out their unique geographies. This path brings objects in relation, or in association, with the industrial and labor processes that make their existence possible. These connections are frequently global in nature, spanning a variety of political-economic systems and social organizations of labor, as the material goods we consume travel around the globe to reach us. The other path we can take flips this strategy on its head, asking *not* “what is the cartographic representation of the life of an object?” but instead “what is the meaning of a place where an object ends up?” To use the strategy of association in this way requires us to ignore the impulse of following objects around, and instead to start seeing objects as they exist in relation to what is already around them.

Extensibility pushes the fundamental glue of actor-network theory—that is, relation—further away from the theoretical sphere and into the material-geographical one. When we see that a group of technologies—

food machinery, sewerage, and agricultural machinery—are external components of the digestive system, it opens a pathway for thinking about how exactly these digestive devices are connected. After all, they still appear to be distinct objects separated in space. Just because they affect one another, why should they *be* one another? The short answer is that the very idea of a discrete, essential object leaves us stuck in a world where phenomena cannot be understood as processes involving other things.