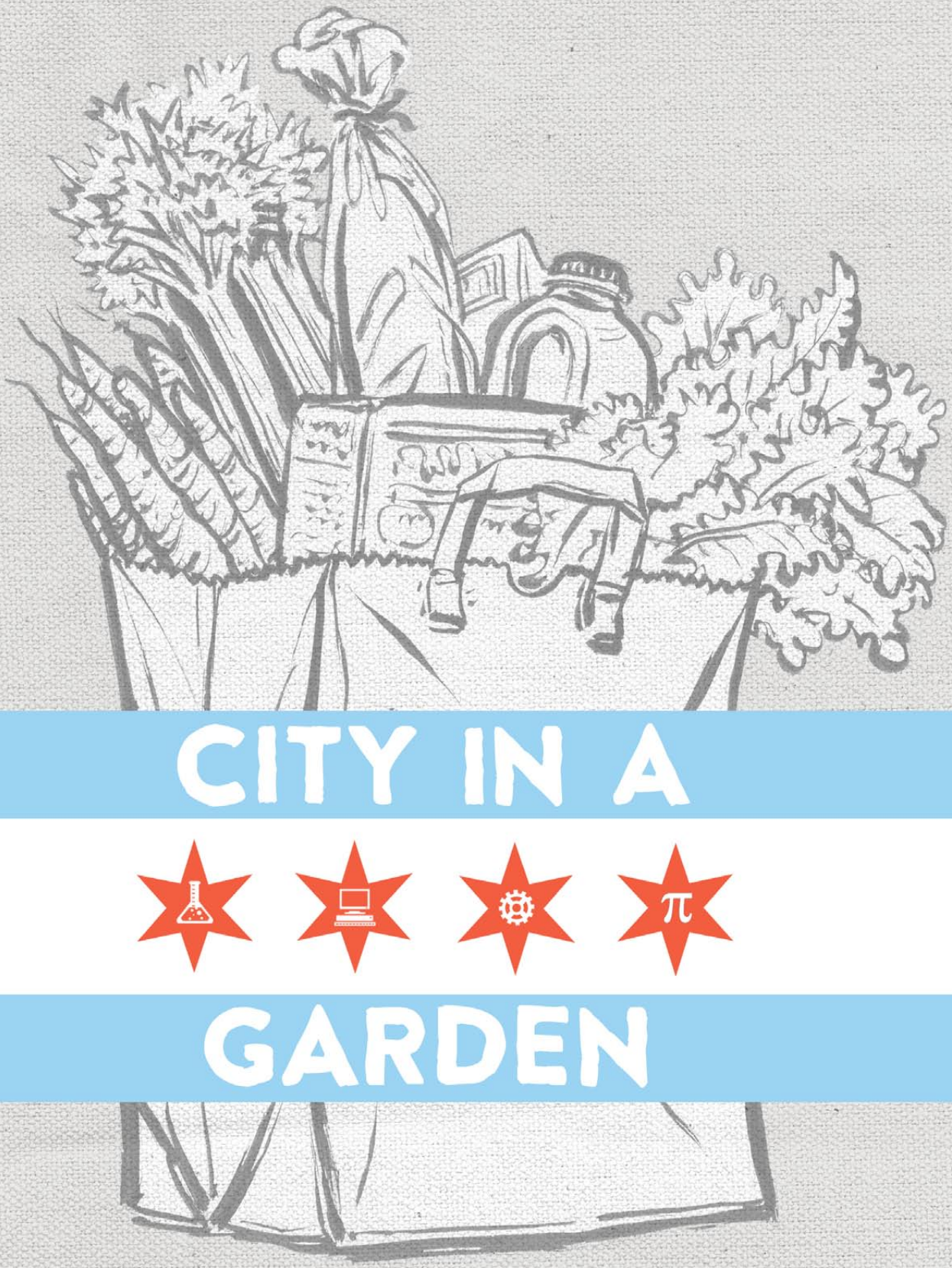

CITY IN A GARDEN

Creatively documenting Chicago's

Art of Science Learning

'urban nutrition' STEM incubator

The Art of SCIENCE Learning

This project was created in conjunction with The Art of Science Learning, a national program that works to inspire 21st century innovations through technology and arts education. You can learn more about The Art of Science Learning's programs here.

Harvey Seifter is The Art of Science Learning's founder and director, and is the project's director and principal investigator.

The Art of Science Learning acknowledges major funding from The National Science Foundation.

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Written by **Hannah Gamble**
with images and comics by **Nick Goettling**

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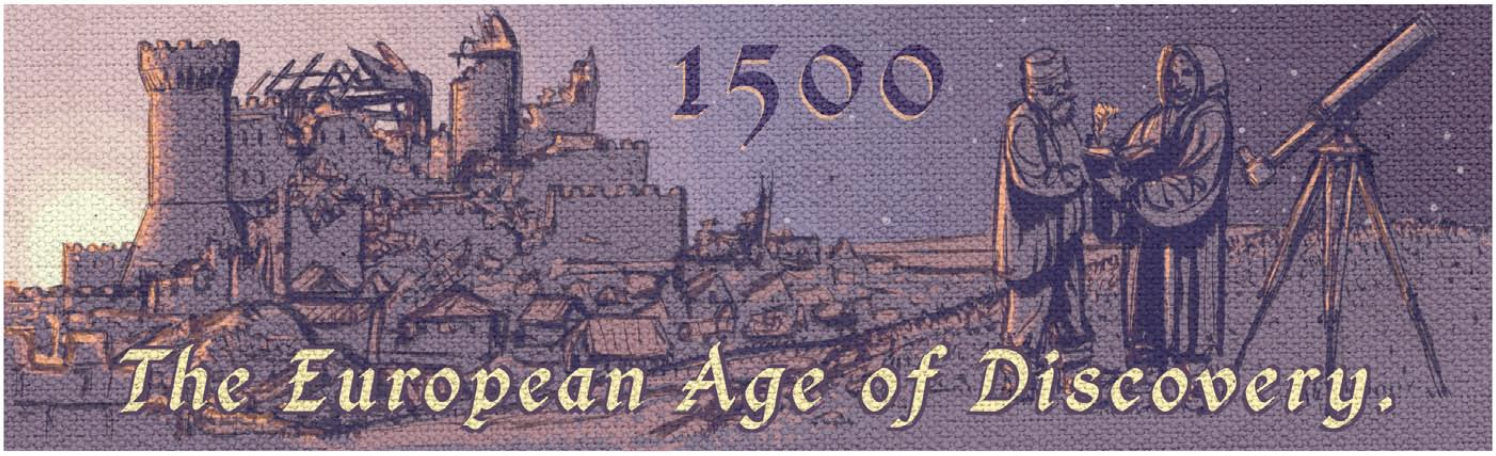
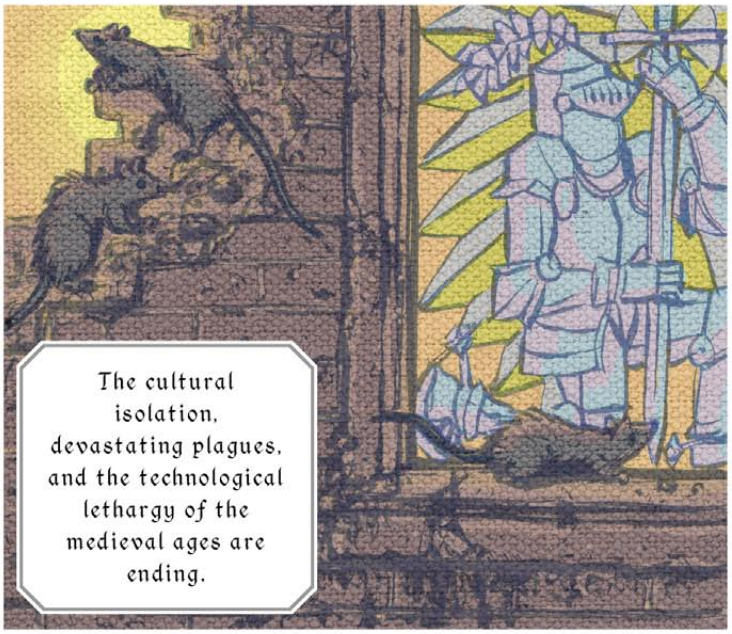
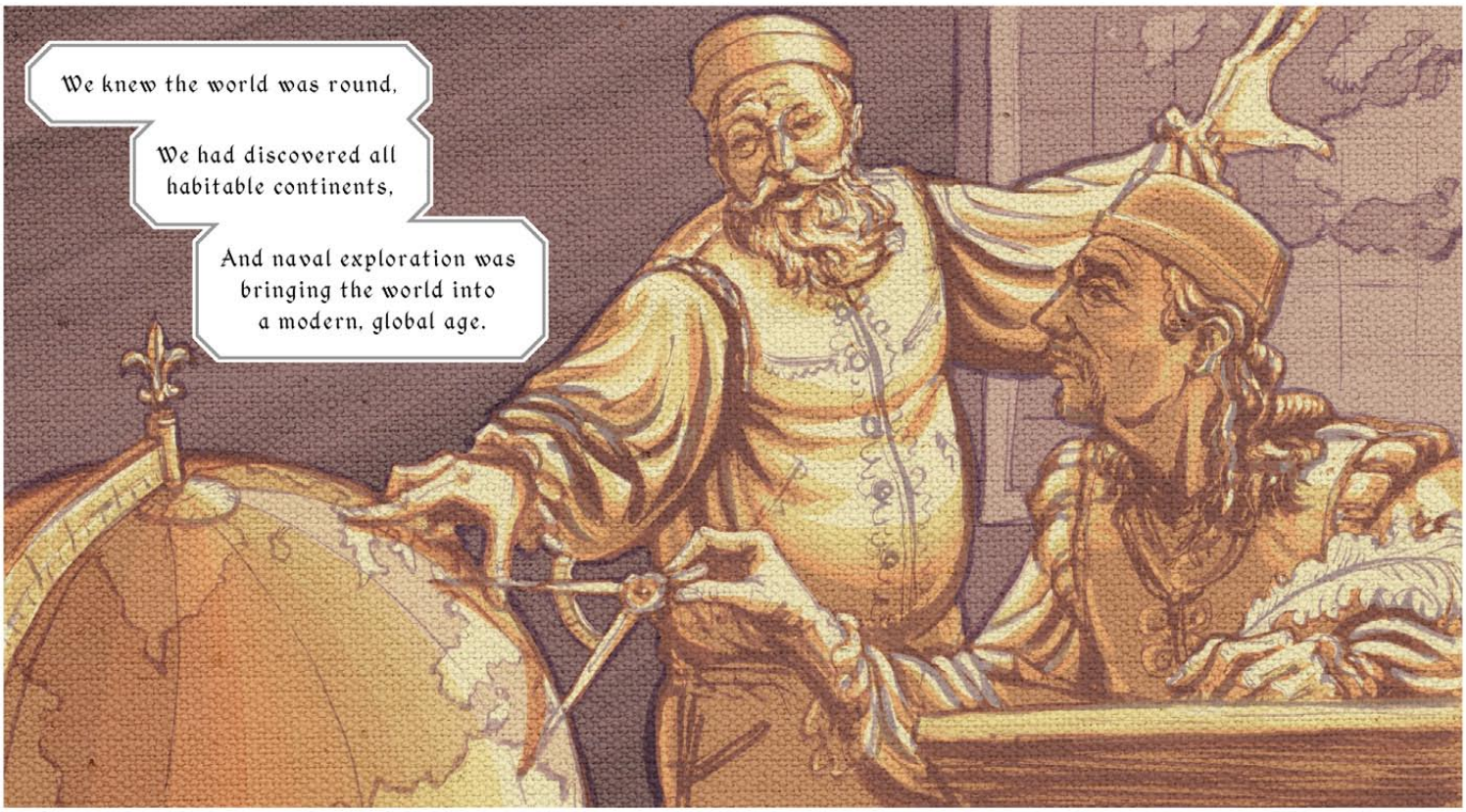
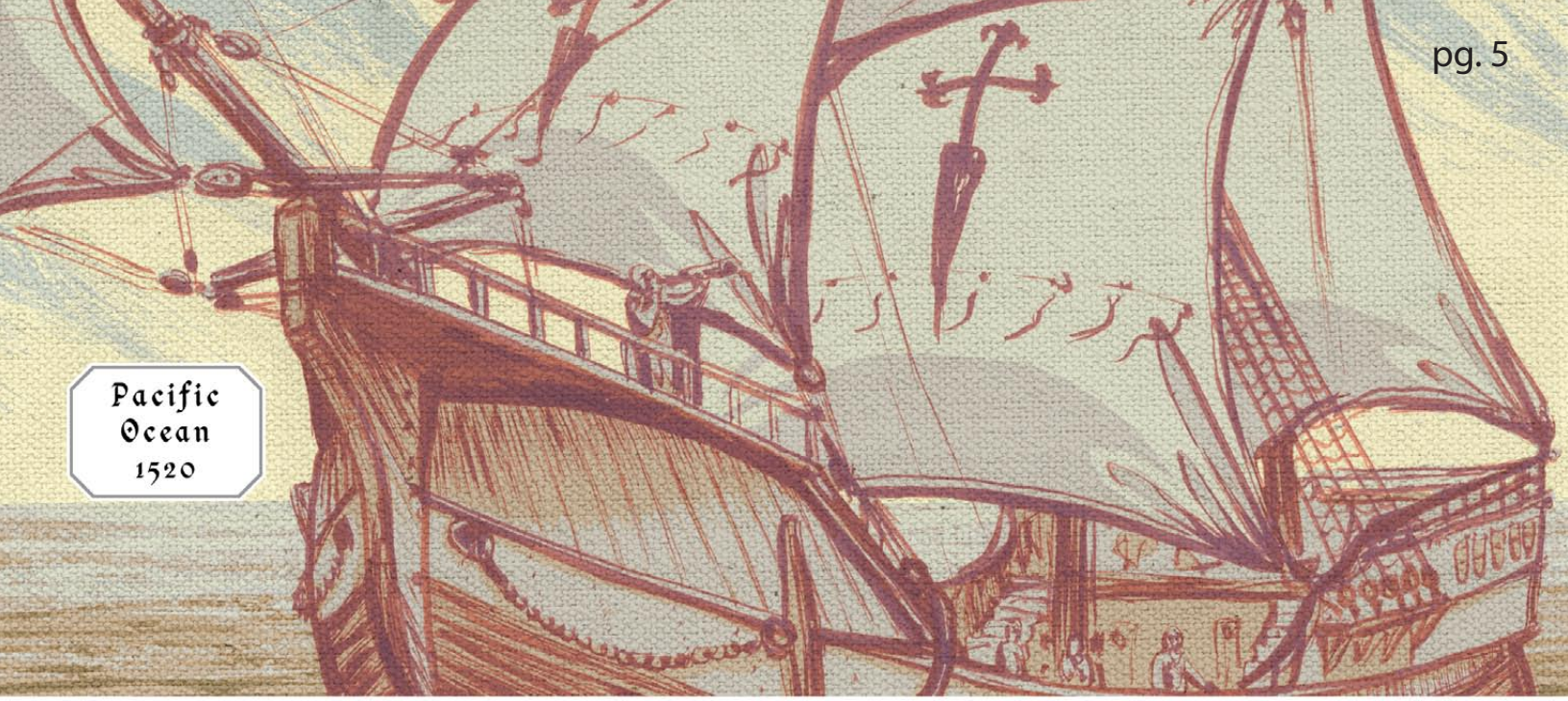
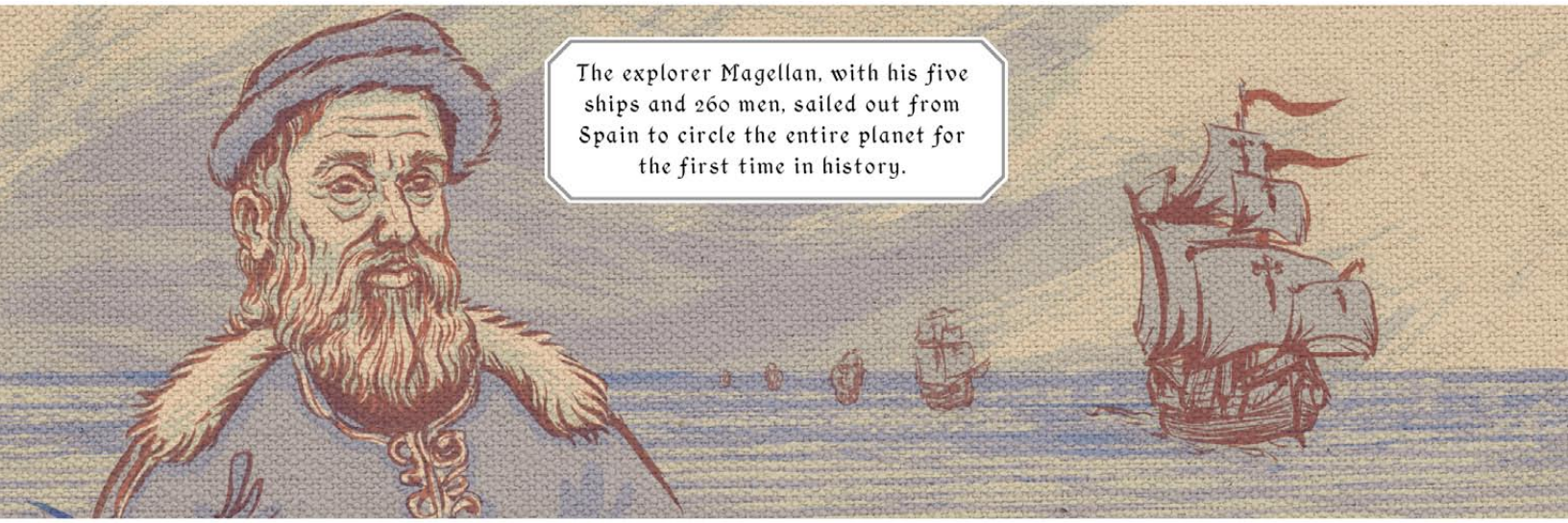

1500
The European Age of Discovery.


The cultural isolation, devastating plagues, and the technological lethargy of the medieval ages are ending.


Technology is making lives better, great thinkers are crafting feats of science and engineering, and explorers are finding new people and places with each voyage.


We knew the world was round,
We had discovered all habitable continents,
And naval exploration was bringing the world into a modern, global age.


Pacific
Ocean
1520


The explorer Magellan, with his five ships and 260 men, sailed out from Spain to circle the entire planet for the first time in history.

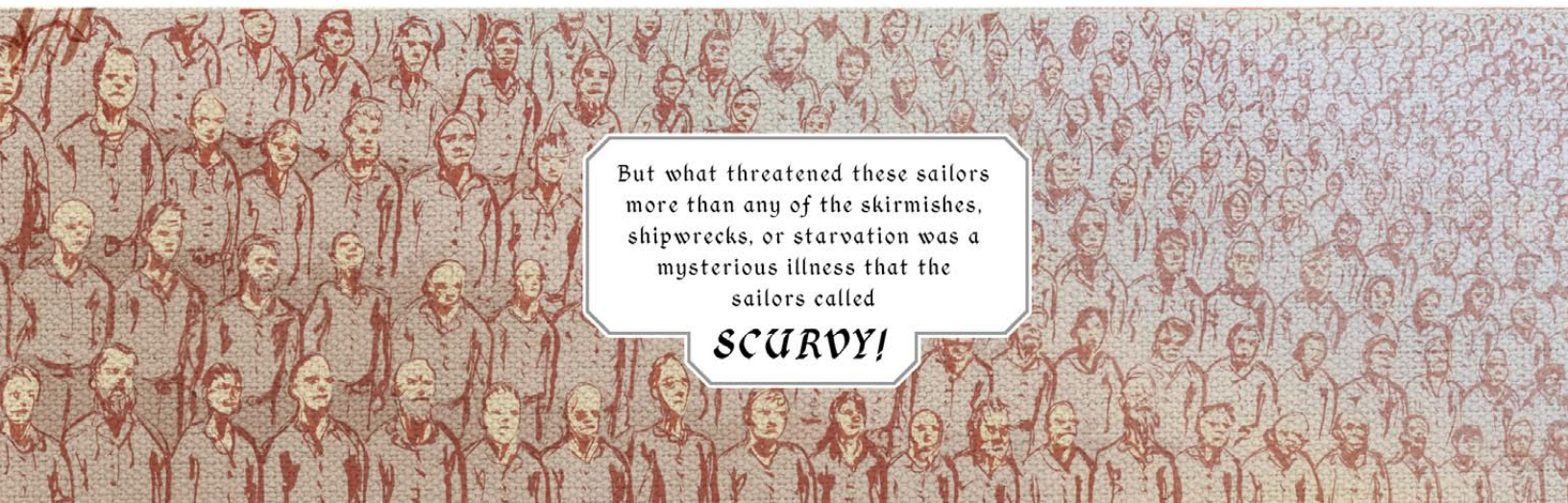

Their journey, like many before it, was brutal...
Three of Magellan's ships mutinied. Those crews were brought back to order, but another of his vessels deserted the fleet just a few months later.

They sailed on, surviving shipwrecks and violent seas around the uncharted waters of South America.

In the Philippines the crew (mostly) survived the battles they started with the natives.

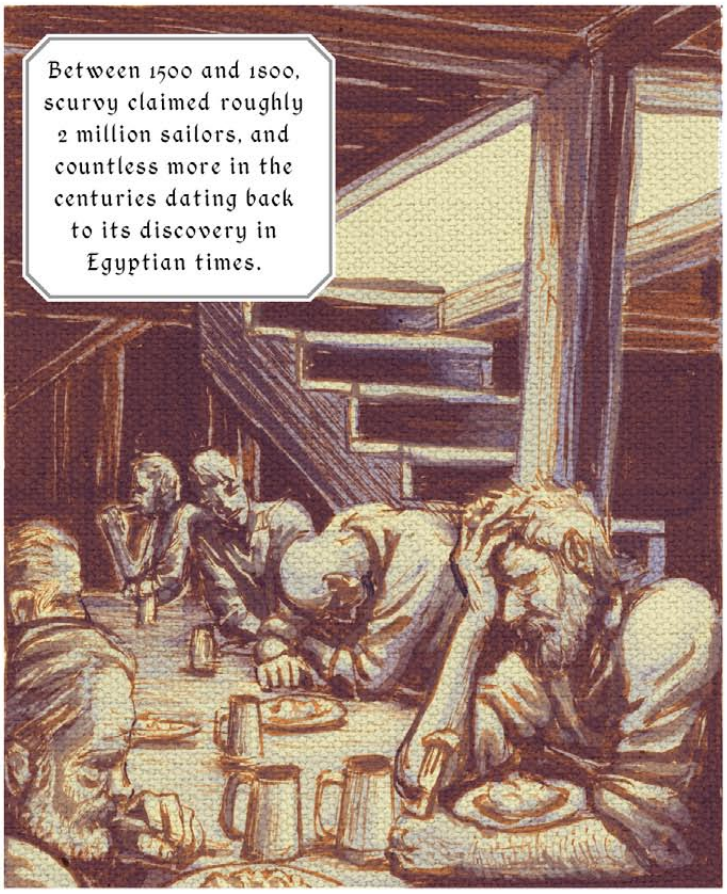
Magellan, however, did not.

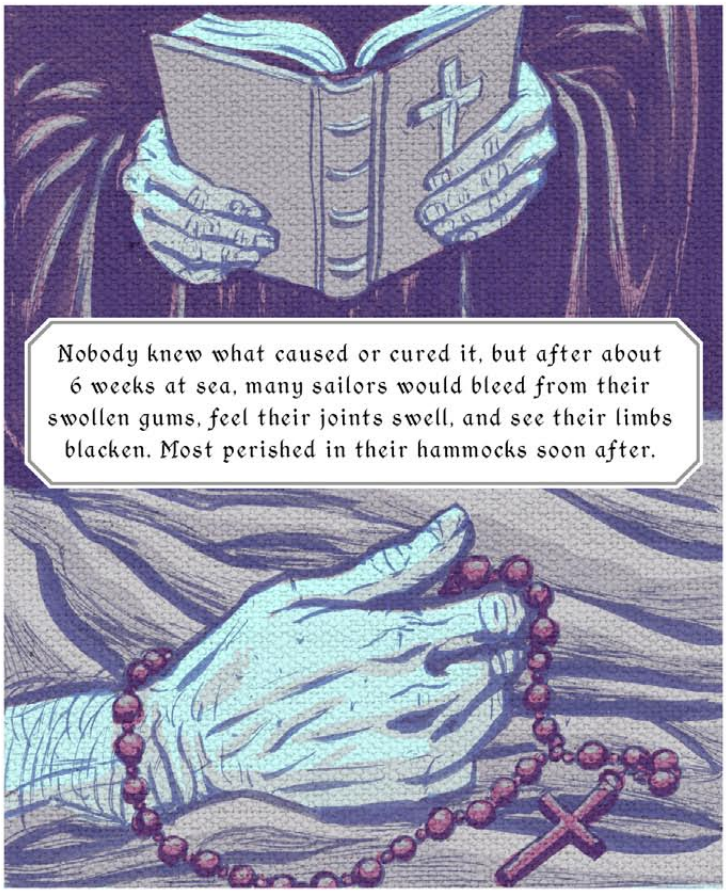
Of the five ships and approximately 260 men that set out on the punishing three year voyage, only a single ship of 18 men survived the entire trip around the world.

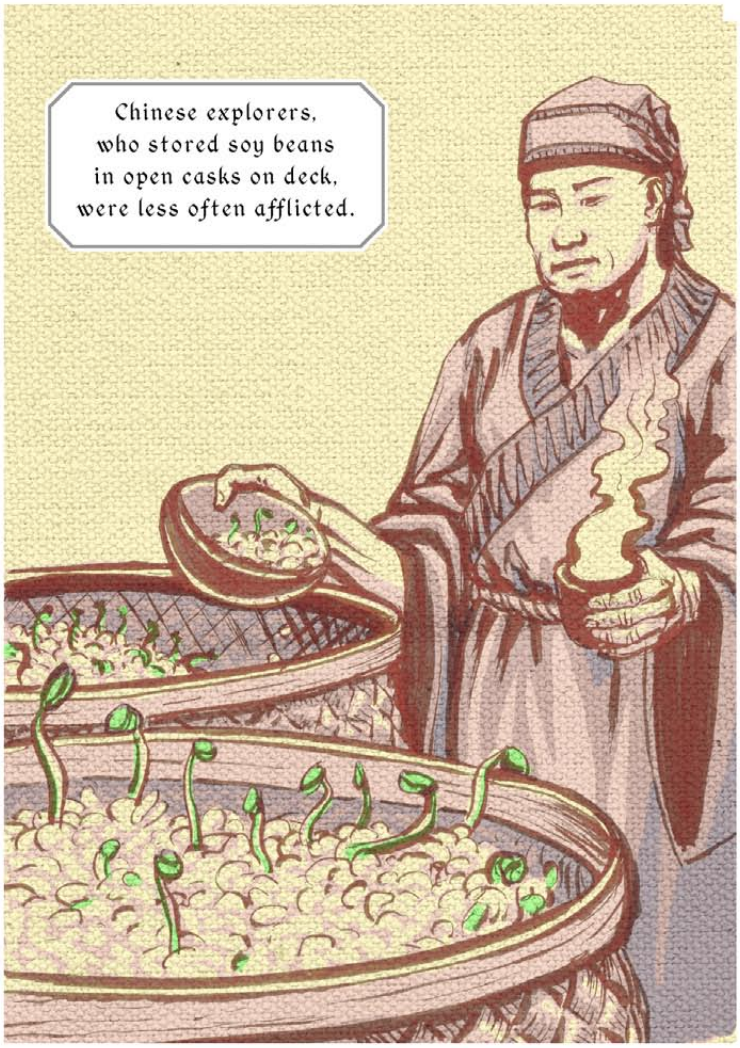


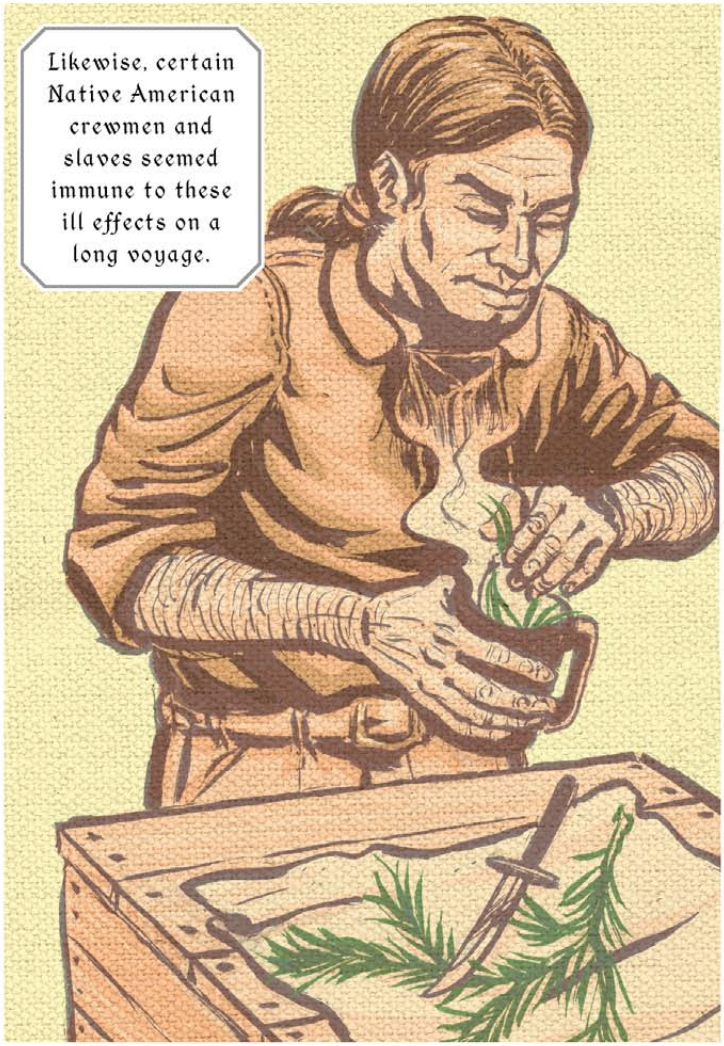
But what threatened these sailors more than any of the skirmishes, shipwrecks, or starvation was a mysterious illness that the sailors called

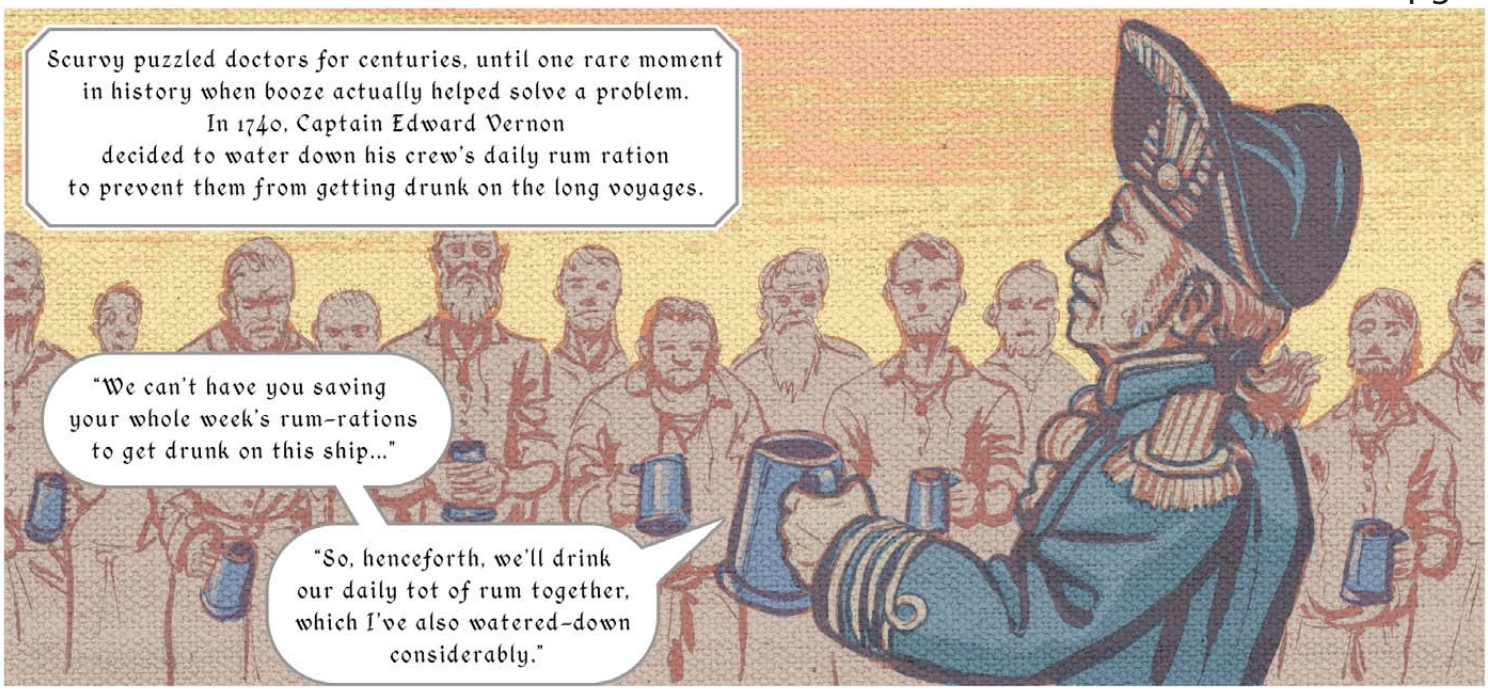
SCURVY!


Between 1500 and 1800, scurvy claimed roughly 2 million sailors, and countless more in the centuries dating back to its discovery in Egyptian times.

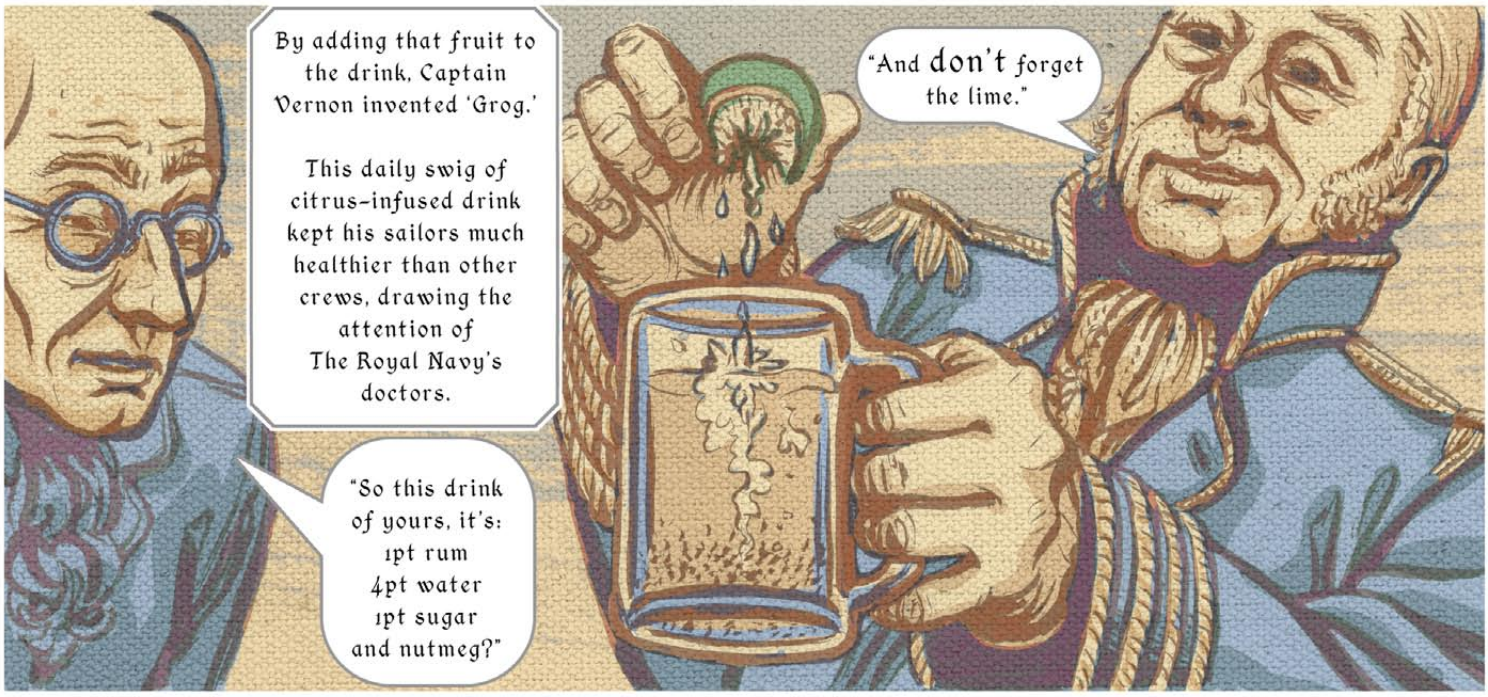

Nobody knew what caused or cured it, but after about 6 weeks at sea, many sailors would bleed from their swollen gums, feel their joints swell, and see their limbs blacken. Most perished in their hammocks soon after.

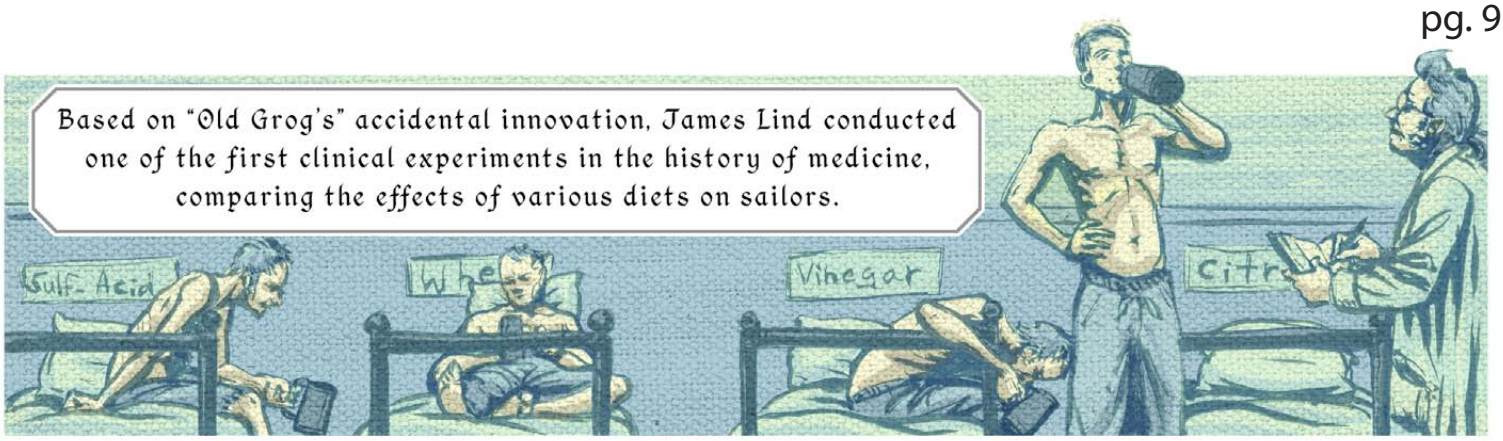

Chinese explorers, who stored soy beans in open casks on deck, were less often afflicted.

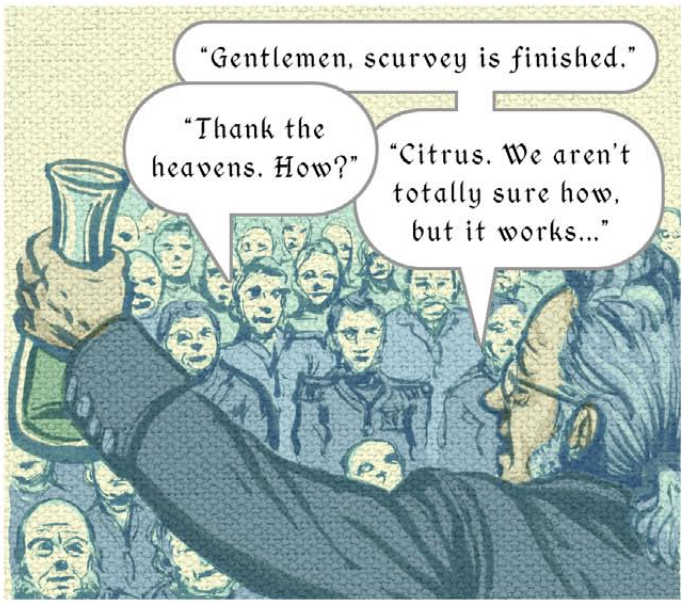

Likewise, certain Native American crewmen and slaves seemed immune to these ill effects on a long voyage.

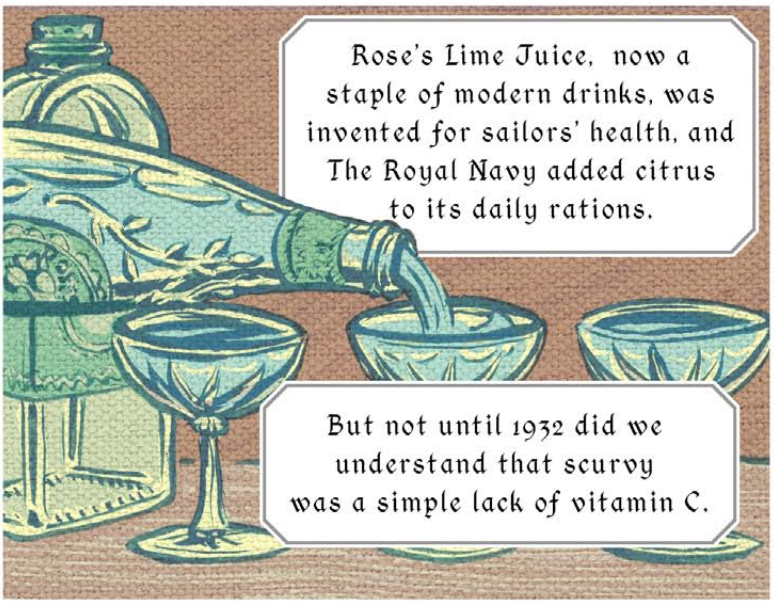

Scurvy puzzled doctors for centuries, until one rare moment in history when booze actually helped solve a problem. In 1740, Captain Edward Vernon decided to water down his crew's daily rum ration to prevent them from getting drunk on the long voyages.
"We can't have you saving your whole week's rum-rations to get drunk on this ship..."
"So, henceforth, we'll drink our daily tot of rum together, which I've also watered-down considerably."

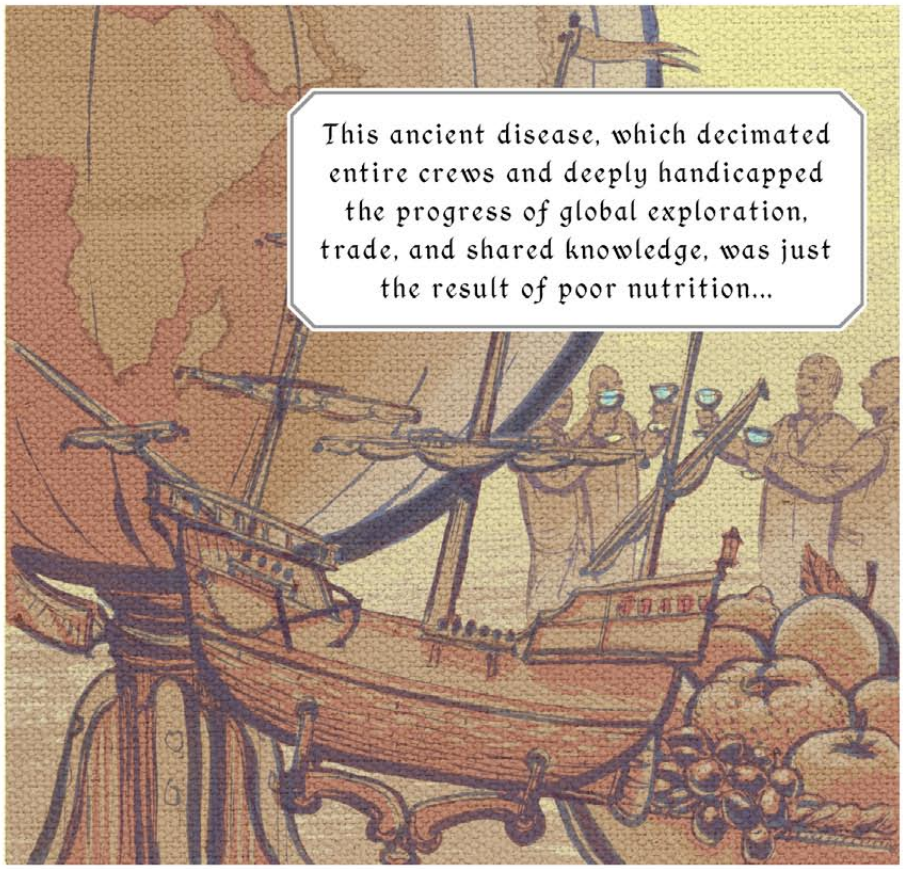

"Sir, the men have been complaining about the taste of your new rum."
"I'd wager it's that stagnant water you've used to thin it out."
"It is foul stuff, I'll admit to that..."
"Can't do much about the water..."
"Tell the crew that if they give me good, sober work until we reach port, I'll find some fruit to make this swill drinkable once again."

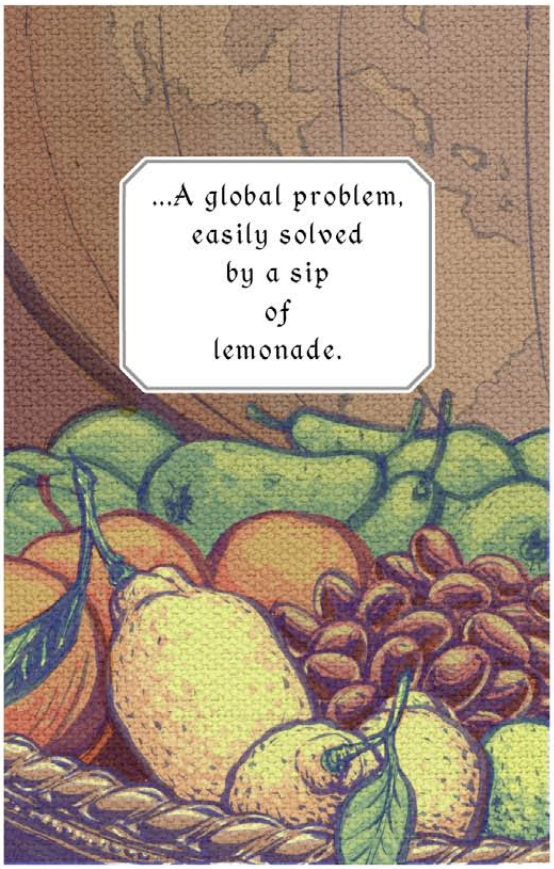

By adding that fruit to the drink, Captain Vernon invented 'Grog.'
This daily swig of citrus-infused drink kept his sailors much healthier than other crews, drawing the attention of The Royal Navy's doctors.
"So this drink of yours, it's: 1pt rum 4pt water 1pt sugar and nutmeg?"
"And don't forget the lime."

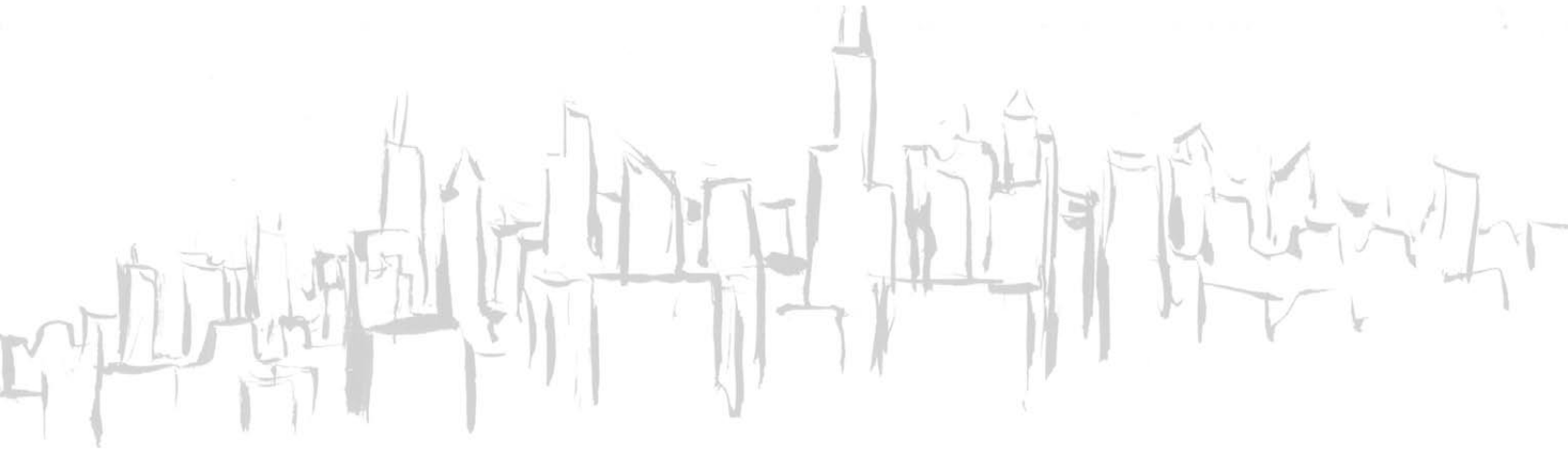

Based on "Old Grog's" accidental innovation, James Lind conducted one of the first clinical experiments in the history of medicine, comparing the effects of various diets on sailors.
Sulf. Acid
Wh
Vinegar
Citrus


"Gentlemen, scurvey is finished."
"Thank the heavens. How?"
"Citrus. We aren't totally sure how, but it works..."


Rose's Lime Juice, now a staple of modern drinks, was invented for sailors' health, and The Royal Navy added citrus to its daily rations.
But not until 1932 did we understand that scurvy was a simple lack of vitamin C.


This ancient disease, which decimated entire crews and deeply handicapped the progress of global exploration, trade, and shared knowledge, was just the result of poor nutrition...


...A global problem, easily solved by a sip of lemonade.



In the 1800's the brand new city of Chicago adopted the latin phrase "Urbs in Horto" as its official motto. It means "city in a garden."

Later, the city's hard work and ingenuity earned it the nicknamed "City of Broad Shoulders," taken from a Carl Sandburg poem.

Today, this City of Broad Shoulders struggles to support the nutritional needs of all its citizens. Many people can't get enough good food in the City in a Garden.

Chapter 2
Intro to the Art of Science Learning

In January of 2014 Chicago's Museum of Science and Industry became home to a program called The Art of Science Learning, an initiative funded by the National Science Foundation, that is (most generally speaking) intended to use the arts "to spark creativity in science education and the development of an innovative 21st Century STEM (Science, Technology, Engineering, and Math) workforce".

The initiative is "built on more than 15 years of work by Harvey Seifter and colleagues, exploring the impact of artistic skills, processes and experiences on learning and the innovation process." The Art of Science Learning, more specifically, has come to Chicago to give initiative participants (or "fellows") the chance to address the problem of food deserts in underserved Chicago communities.

What is a "Food Desert?"

The United States Department of Agriculture defines a food desert as: *"...urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food."* Often, people living in food deserts have to rely on gas stations, liquor stores, or fast food for many meals, which can have profound negative impact on their health.

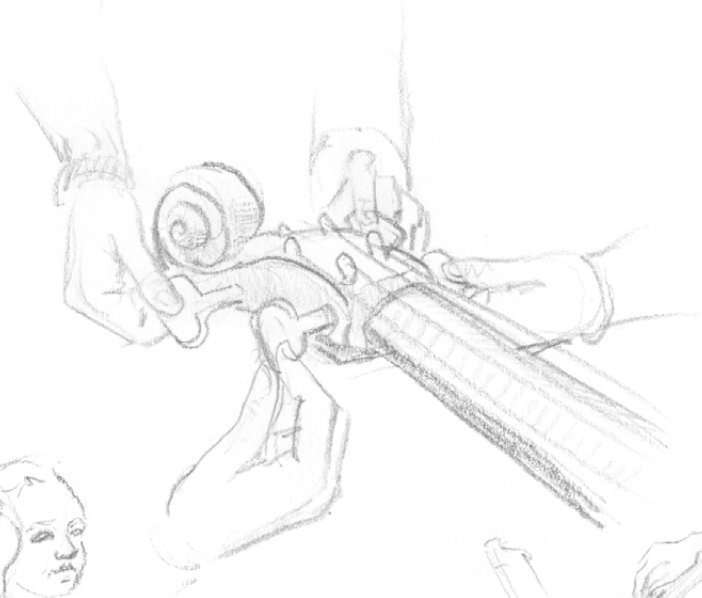
Here's How the Program Was Set to Work

100 fellows would commit to meeting at the Museum from roughly 9-3 on Saturdays (roughly twice a month) from January 2014 to December 2014. They would be visited each week by different teaching artists who would lead them in activities corresponding to different stages in the innovation process.

For example, I (Hannah) first became aware of the project in December of 2013 when I received an email asking if I'd like to develop and teach a poetry workshop for the fellows in March:

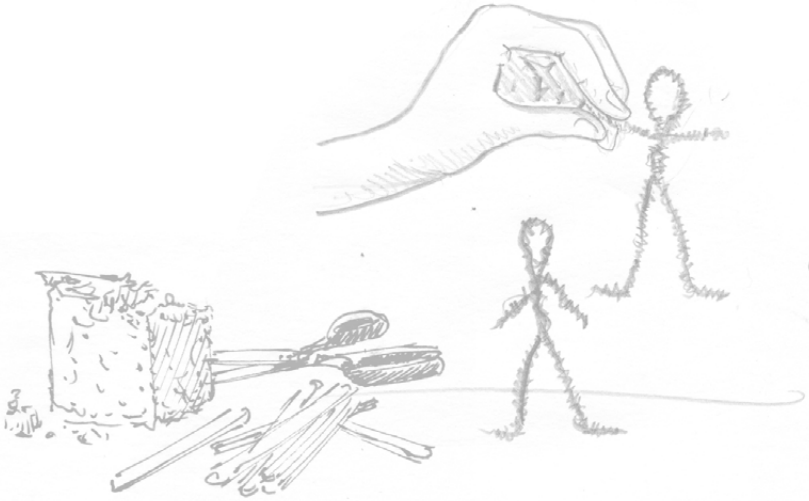
> *"At a step in the innovation process known as opportunity analysis we would like to use the art form of poetry [to] uncover the true nature/meaning of problems and thus the value of the opportunity to solve those problems. This is the second step in an innovation process that begins with opportunity identification and continues through idea generation and selection, and ultimately the creation of solutions to address urban nutrition in Chicago."*

In the first few months of the incubator, the fellows were also visited by nationally recognized musicians, theater directors, improvisational theater teachers, and visual artists.



The fellows did team exercises with musical instruments to explore group dynamics and collaborative improvisation.

It was not unusual to see tables awash in markers, paper, paints, pipe-cleaners, dowel rods, and styrofoam balls.



In these sessions, the goal was to encourage, through the arts as well as through STEM principals, new ways of identifying problems, proposing solutions, and then developing products that would aid in these solutions to the problem of urban nutrition.

The fellows enjoyed the creative workshops, though a few were unsure how to transform these abstract lessons in to concrete solutions. I thought about that as the workshop wrapped up for a lunch break. We all hiked through the museum's long halls and broad galleries, past hundreds of models and machines, surrounded by abundant evidence that inspiration has often come from unexplected places.

Chapter 3
Notes from the Incubator

After several months of doing practice challenges in teams that are regularly shuffled, the AoSL fellows arrive at the museum this morning ready to find out which team they will join permanently.

At this point, it's clear that friendships have formed between many of the fellows: one of the round tables in the large, open room where today's session will be held has chocolate dusted almonds in the center, clearly brought by one of the team members. One woman, Anita, tells a high school aged boy that she has been hearing Kendrick Lamar's songs everywhere.

Some people are eating McDonald's for breakfast; others have brought food from home in little plastic containers. People are drinking coffee, soda, and water.

I ask one of the sessions leaders how the teams have been chosen. He tells me that the fellows have been placed on teams based on which solution they want to spend the next 8 months working on. (There are now 8 proposed solutions, which were chosen by votes from the fellows from a much bigger pool of proposed solutions.) Occasionally, a fellow's skill set has prompted leaders to move him or her to a different team.

I walk over to one of the tables where there seems to be the most talking, despite the fact that it is 9 on a Saturday morning. This is the table for Team O, which, at this point, is made up of a couple of high school students, one college student, and a young dance teacher.

Kleah, a student at Lincoln Park High School, and Andrew, a student from Lane Tech High School, tell me that they think Team O is made up of all the people who forgot to vote (I learn later that there was just a 74% turn out to vote on the proposed solutions).

Kleah is wearing a cheerful floral skirt and has a genuine, full-faced smile. Andrew is tall and lanky— he tells me that he thinks his long, thin arms and legs make him look like one of the aliens from “Close Encounters of the Third Kind.” He’s comfortable owning the fact that he’s a “good researcher.”

They are joined by Eric, a student at Daly College, who’s majoring in education and wants to teach high school science. He said he found out about the AoSL incubator from a STEM conference he attended in the city. The urban nutrition challenge is one that he himself has experience with: he lives in the town of Cicero (a little south and a lot west of the city) where there are grocery stores on every block. His aunt, on the other hand, lives on Chicago’s south side. She regularly makes a 20-30 minute drive to Cicero where fresh ingredients to make mexican food is cheaper and more readily available.

Each team has a mentor, and Team O's mentor is Eli, a product designer and educational consultant who teaches design principals to teachers at STEM middle schools and high schools.

The specialties of some of the other group's mentors veer closer to the world of the arts than they do towards STEM. Rene, for instance, is a university theater teacher/ film director, and RJ is an improv teacher and storyteller.

Today's session will be led by John (another theater director) who is going to give a presentation on how to use theater/ acting/ dramatic arc techniques in product pitches. The teams will, at some point, have to pitch their products to a panel who will offer critiques of both the pitches and the ideas themselves and will ultimately reject the pitch or send the team on to the next level of their product development.

The "products" will be, of course, related to the solutions that each team will begin working on today. For instance, if the problem is "certain neighborhood schools don't teach kids about proper nutrition," and the proposed solution is "teach kids at these neighborhood schools about proper nutrition," then the product that will be developed by a given team might be an elementary school classroom program focusing on nutrition that is developed by the team and then actually integrated into local schools' curriculums.

The session will be starting soon, but I take a spin around to a few other teams' tables. I run into Anita, a woman I remember from when I taught a poetry workshop as part of the AoSL program (before I became one of the Artists in Res). She is helpfully outspoken and challenges her peers in a way that helps discussions become more nuanced and open to productive uncertainty.

At team L's table, I talk to Lindsay, a dancer and teacher on the south side. She thinks her group is headed in the direction of being the middle men between community leaders and the "makers," by which I think she means anyone who has products that some of Chicago's communities don't have access to.

Some of the fellows have been corresponding with me through email— I look around the room to see if I can spot Rebecca and Candice (both on Team M). Both of these women are typical of many of the incubator fellows in that they have varied talents, in this case art, health, education. Candice is "interested in the ever-unknowable in other people"; started a career in the medical field (worked in a hospital lab) but then went on to do photography and make her own ceramics glazes and also performs in a band. Rebecca is teacher for Chicago Public Schools; she has an identical twin sister, is a self-described "science geek," and does yoga when she wants to relax.

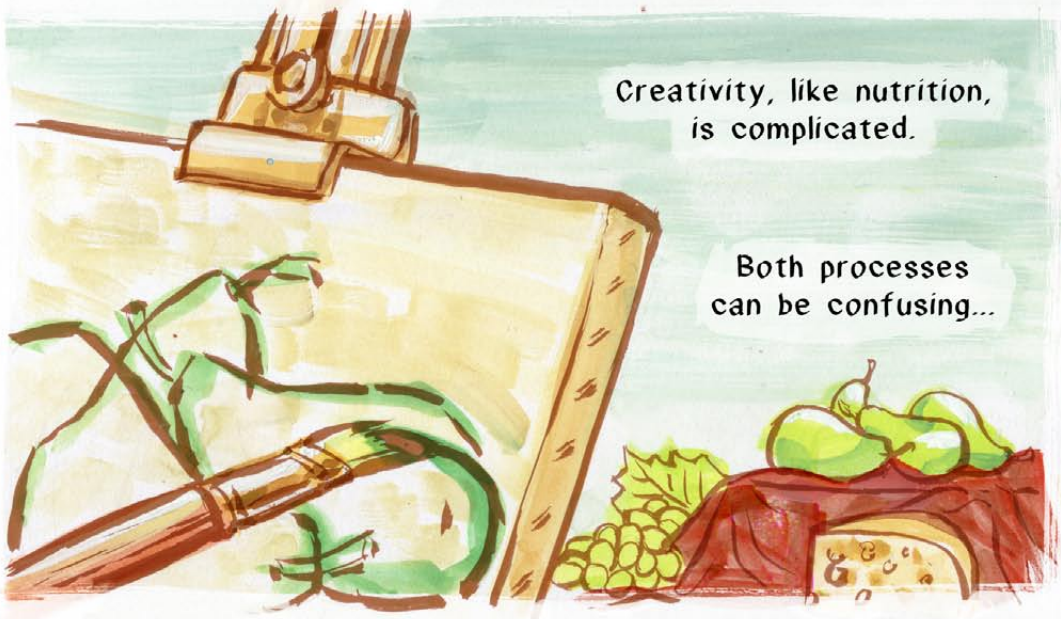
At Team N's table I talk to Libby Zagorski who's studying to be environmental engineer at Wright College. Like many of the fellows who have or are pursuing a career in the sciences, Libby also loves art and has done visual art since childhood. She says that her boyfriend and Mom are being supportive and that she is excited about how being a part of this project this will look on her resume. She also seems to have a strong sense of responsibility to the other participants-- about half of the original participants have quit the incubator, and Libby says that she gets bummed out each time she arrives at a session to see that someone else is missing and won't be returning.

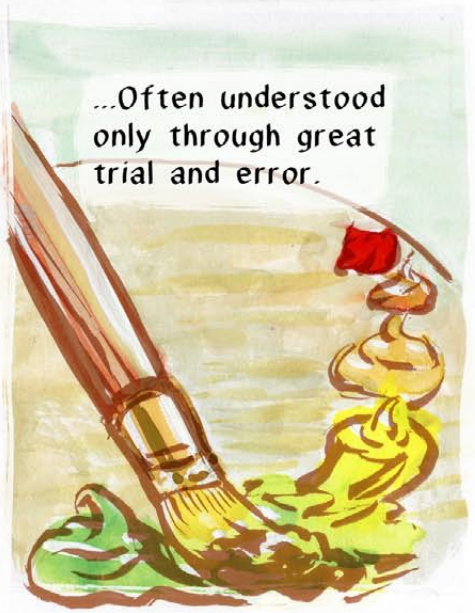
I'm not surprised to hear that many of the fellows are as frustrated as they are excited about this year-long commitment. As with most ambitious creative projects involving large groups of people trying to find new solutions to longstanding problems , there is a lot of uncertainty, working hard and then throwing it all away, getting excited about something and then finding it won't work, and feeling overwhelmed by the enormity of the task.

Thinking about what Libby said about feeling a responsibility to not abandon the remaining fellows, and also about Kleah and Andrew joking around together at 9 am on a Saturday morning, I feel sure that a lot of what will help these projects succeed will be due to the friendships that are forming.

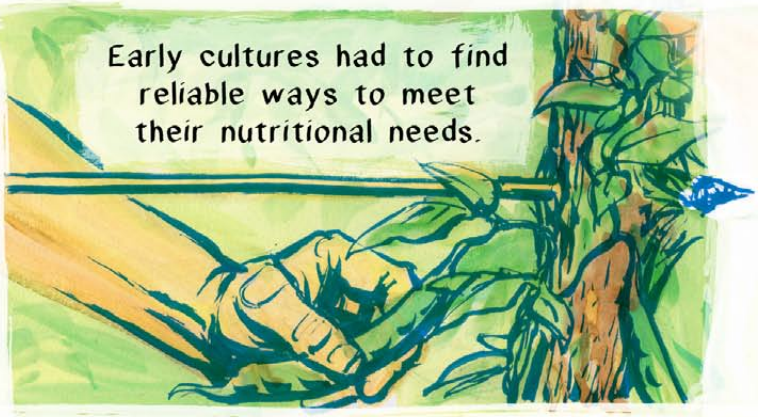
CREATIVE PROBLEM SOLVING:

A MESSY PROCESS





1. CREATIVE SOLUTIONS CAN SOLVE PRACTICAL PROBLEMS



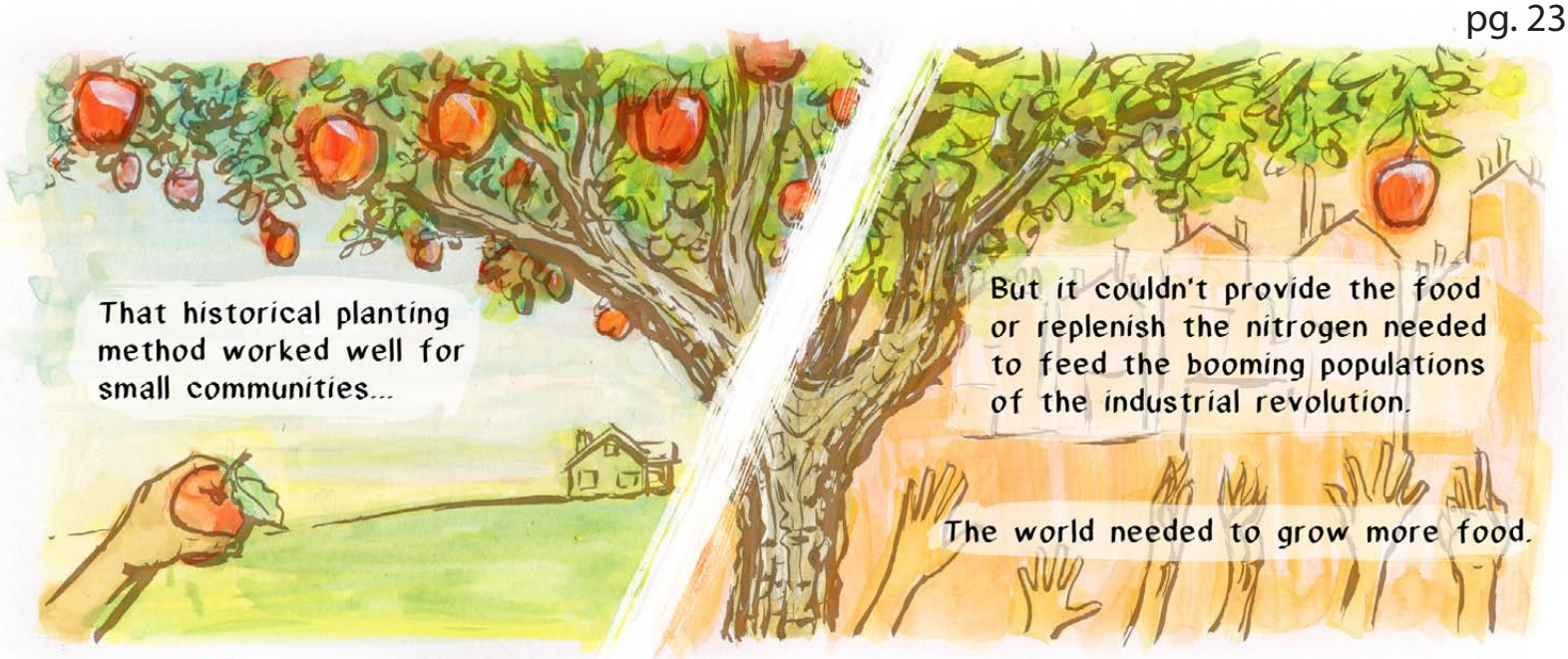
Early cultures had to find reliable ways to meet their nutritional needs.

Instead of relying on luck and foraging to find their food, many Native Americans used creativity to develop predictable crops.

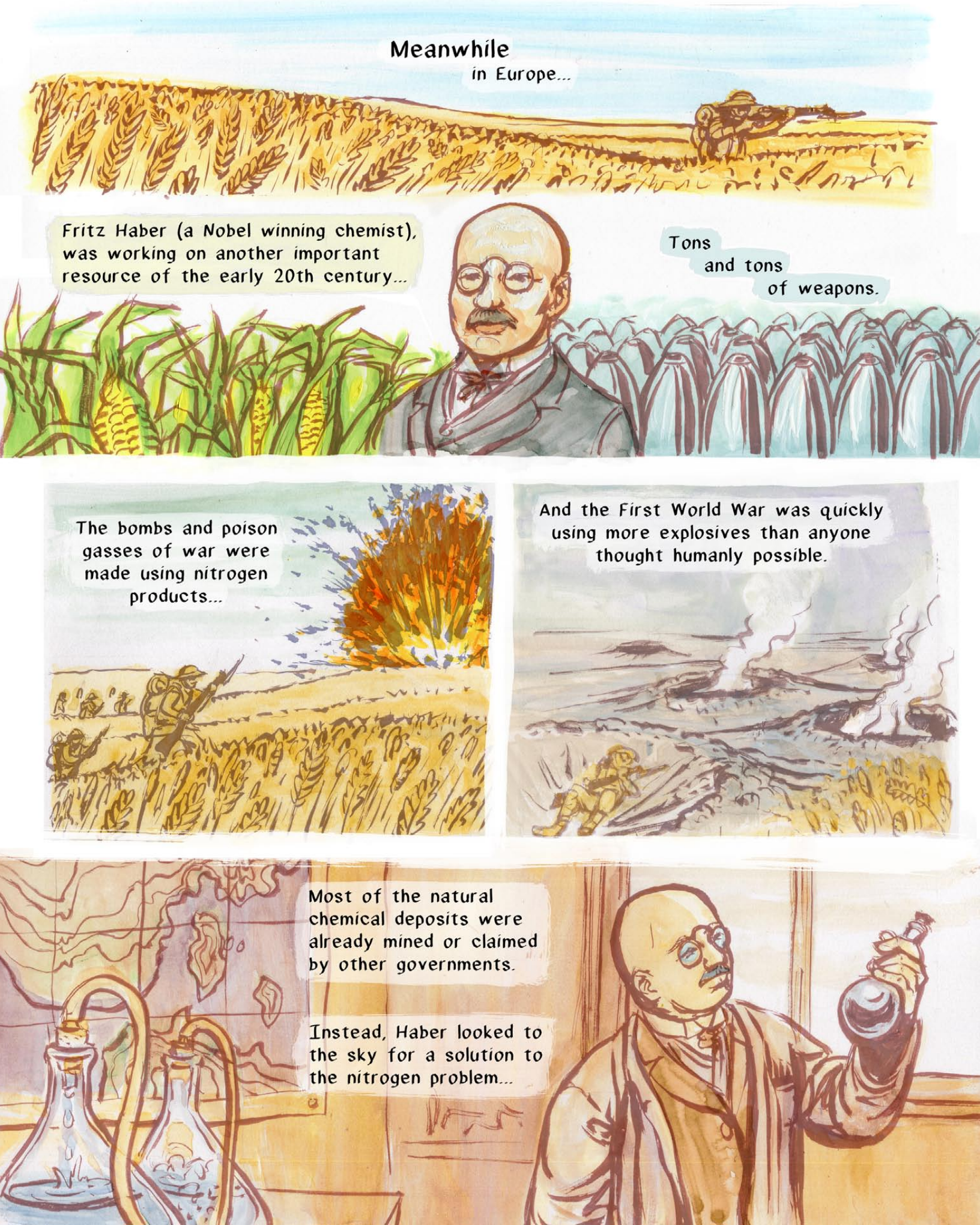
Through doubtless trial and error, the tribes learned to plant squash, beans, and corn together.

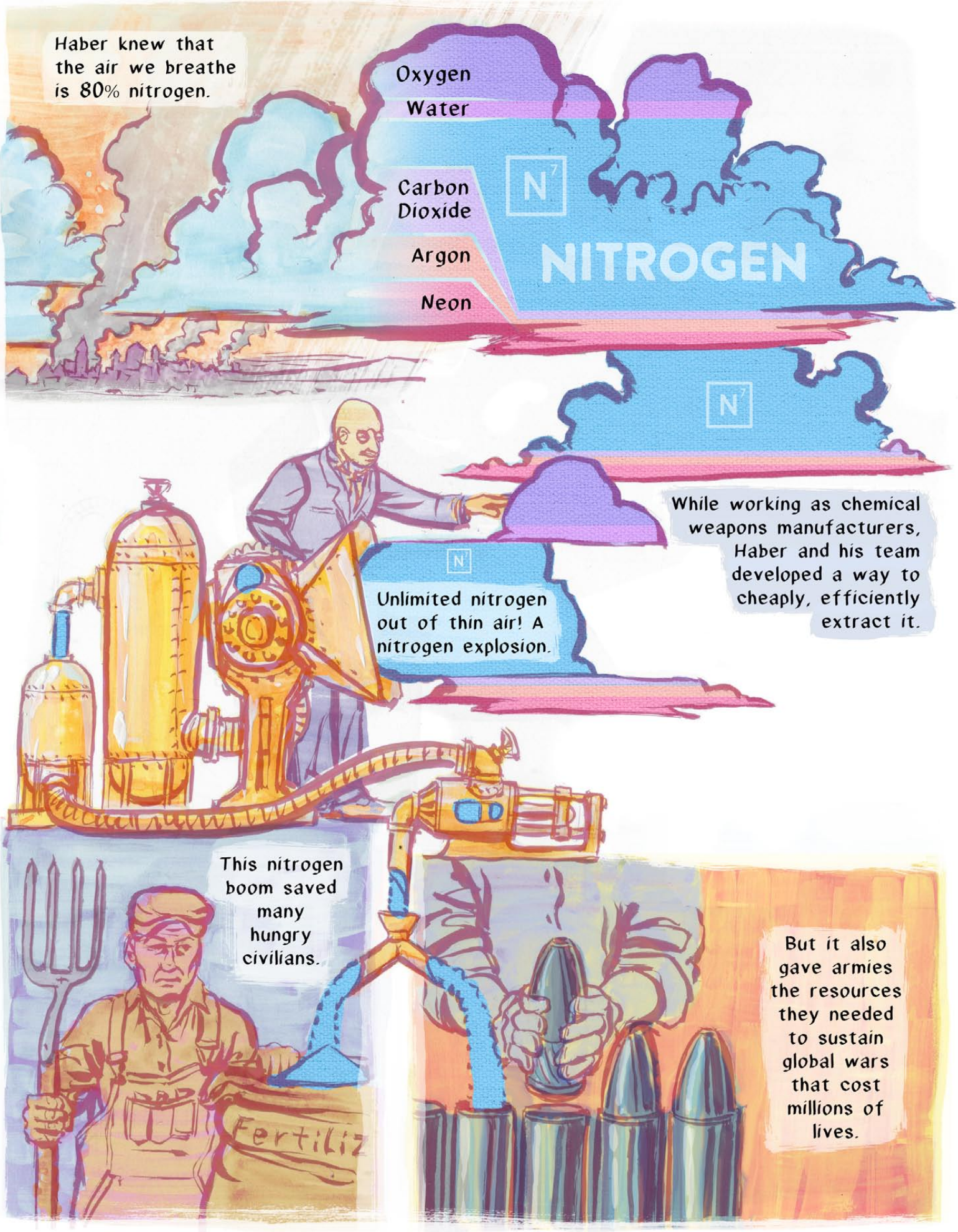
The three provided a fairly balanced diet, each providing the nutrients that the others lack, and the actual shapes of each plant benefited the growth of the other two.

Broad squash leaves cover the ground to prevent weeds and provide mulch, the corn provides a trellis for bean vines to climb, and the beans put nitrogen (essential for crops), back into the soil.

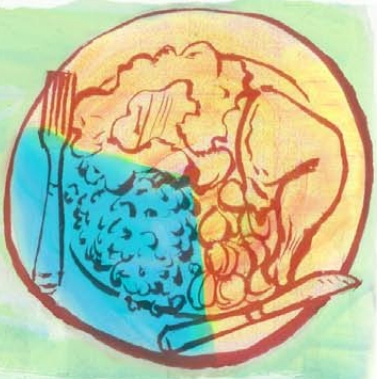


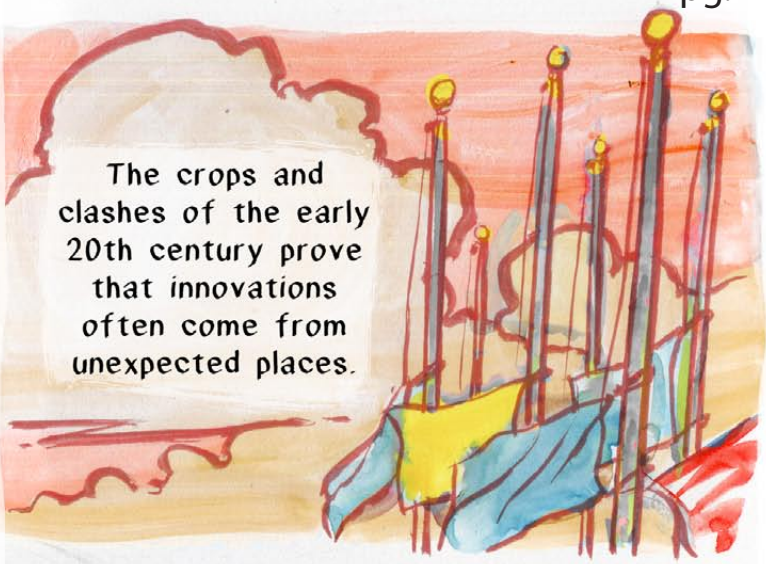
2. CREATIVE SOLUTIONS OFTEN COME FROM UNEXPECTED PLACES


Meanwhile
in Europe...
Fritz Haber (a Nobel winning chemist), was working on another important resource of the early 20th century...
Tons and tons of weapons.
The bombs and poison gasses of war were made using nitrogen products...
And the First World War was quickly using more explosives than anyone thought humanly possible.
Most of the natural chemical deposits were already mined or claimed by other governments.
Instead, Haber looked to the sky for a solution to the nitrogen problem...


Haber knew that the air we breathe is 80% nitrogen.
Oxygen
Water
Carbon Dioxide
Argon
Neon
N7
NITROGEN
N7
N7
Unlimited nitrogen out of thin air! A nitrogen explosion.
While working as chemical weapons manufacturers, Haber and his team developed a way to cheaply, efficiently extract it.
This nitrogen boom saved many hungry civilians.
Fertiliz
But it also gave armies the resources they needed to sustain global wars that cost millions of lives.

Haber's process, which made possible the global, industrial scale wars or WW1 and WW2, also provided the fertilizer for at least 1/3 of the food we eat today, and provides the nitrogen responsible for almost half the proteins in your body.





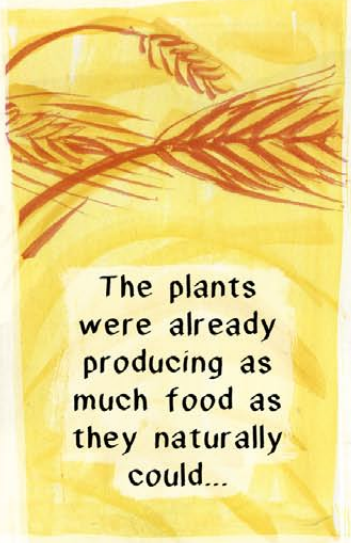
The crops and clashes of the early 20th century prove that innovations often come from unexpected places.

3. SOMETIMES A SOLUTION CAN ALSO REVEAL NEW CHALLENGES

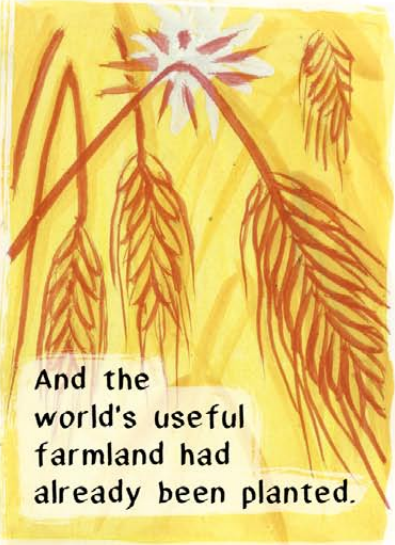
Despite the turmoil of two world wars, many populations around the world grew much bigger and faster than their food supplies could.

Scientists predicted that "hundreds of millions of people will starve to death," in India alone.

Even with the fertilizer enriched soil...

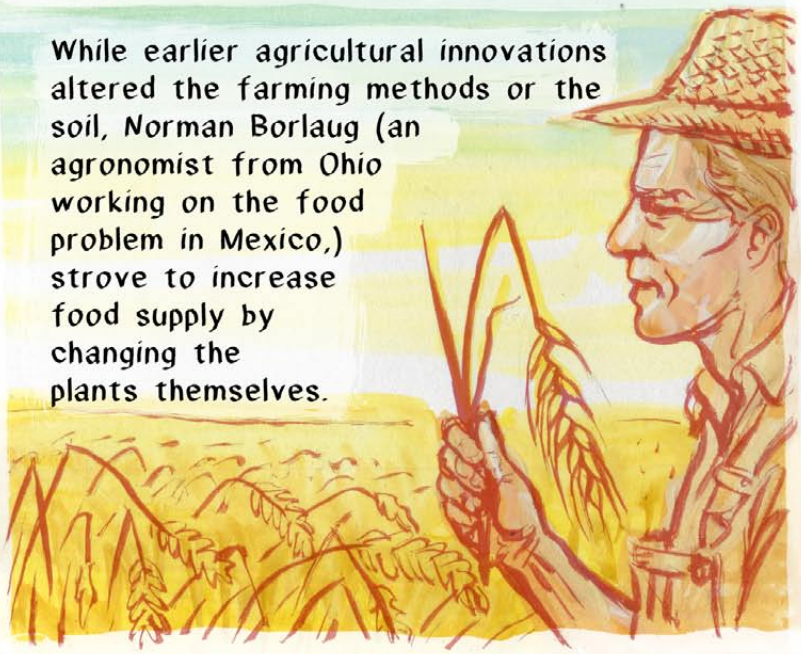


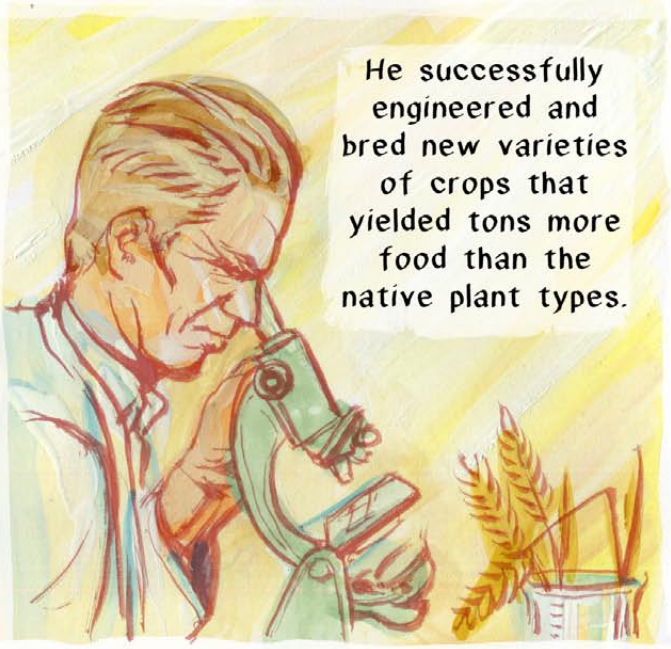
The plants were already producing as much food as they naturally could...



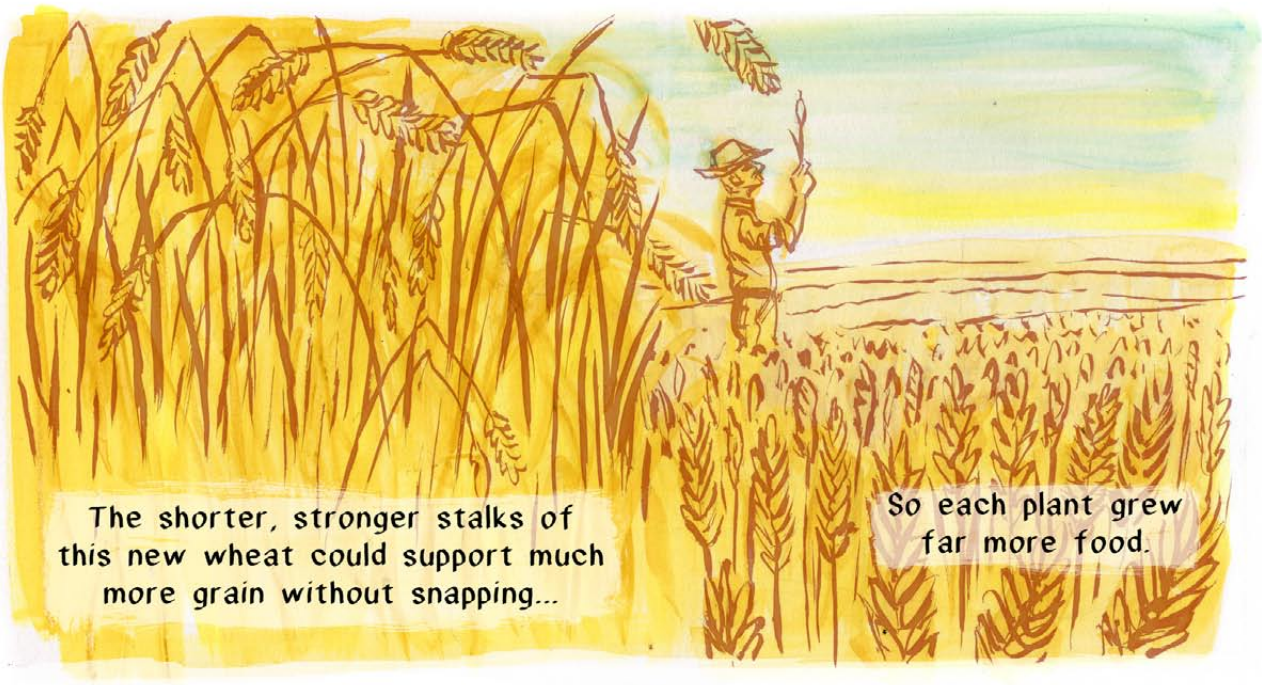
And the world's useful farmland had already been planted.

While earlier agricultural innovations altered the farming methods or the soil, Norman Borlaug (an agronomist from Ohio working on the food problem in Mexico,) strove to increase food supply by changing the plants themselves.

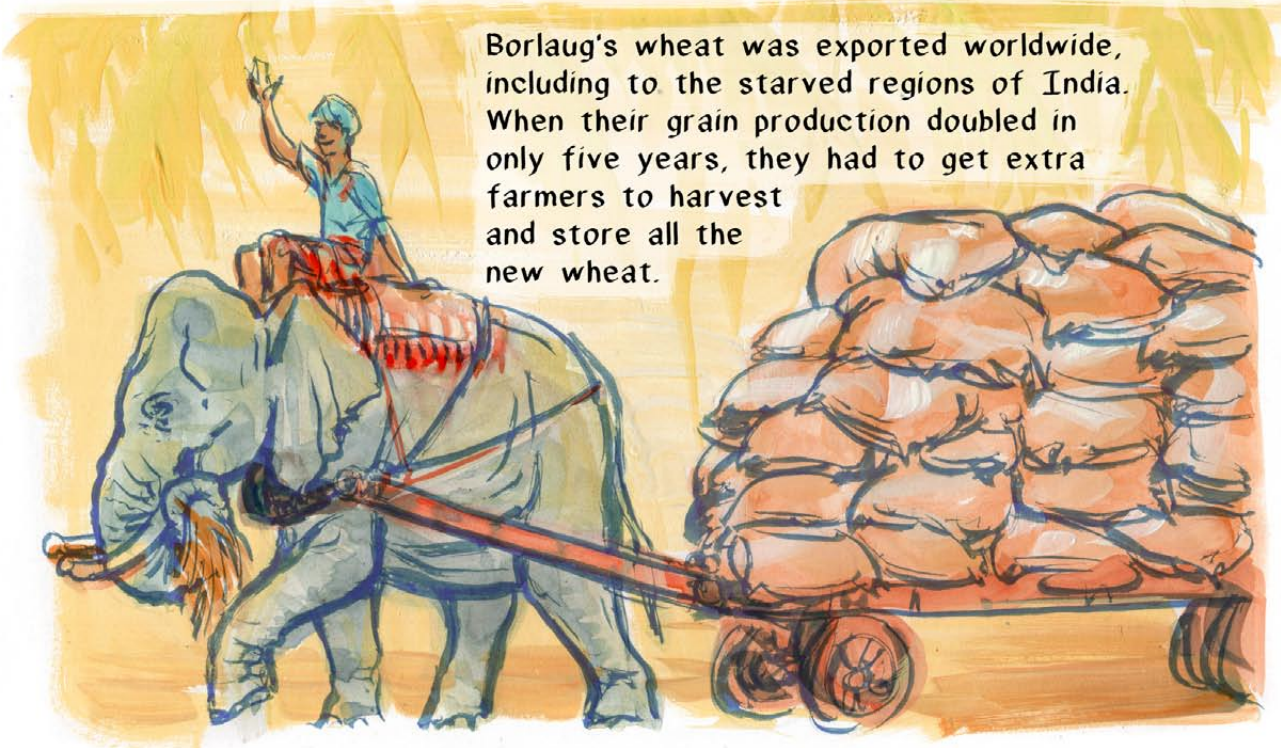




He successfully engineered and bred new varieties of crops that yielded tons more food than the native plant types.


The shorter, stronger stalks of this new wheat could support much more grain without snapping...
So each plant grew far more food.


Farmers harvested enormous yields with this new crop.
In 1963 Mexico harvested six times more wheat than the year before.


Borlaug's wheat was exported worldwide, including to the starved regions of India. When their grain production doubled in only five years, they had to get extra farmers to harvest and store all the new wheat.

Between 1950-1984, Borlaug's "Green Revolution" increased world grain production by **250%...**

...And he's widely credited with saving **1 billion** lives worldwide.

(They gave him a Nobel Peace Prize for that.)

Not bad for an farmer from Ohio.

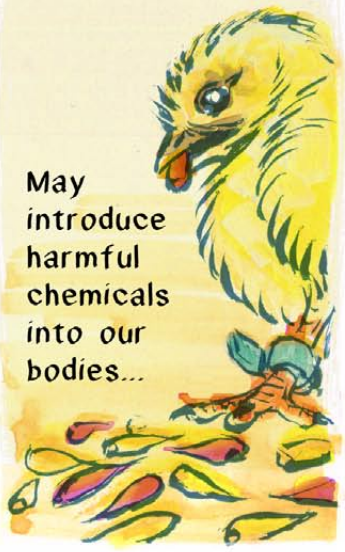
But the modern agricultural methods that Borlaug pioneered have been heavily criticized.

His Green Revolution also made possible the birth of industrial big-agribusiness...

And the controversial trend toward engineering most of our vegetables, grains, and meat.

Many people worry that manipulating the genetic code of our crops...

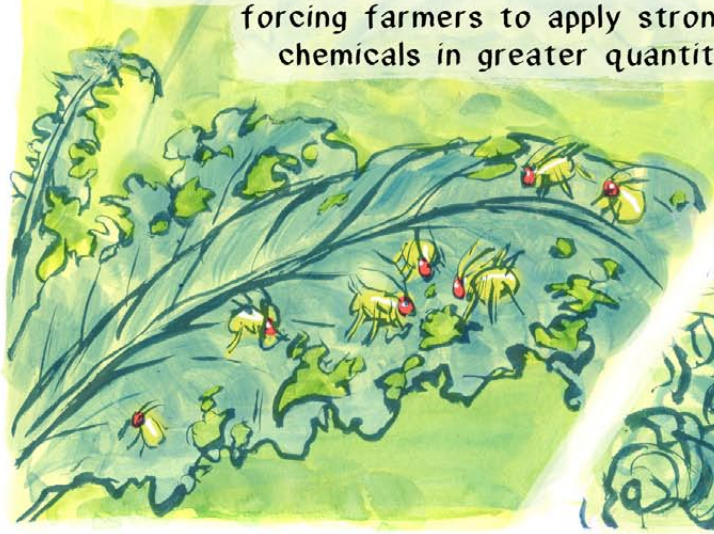
May introduce harmful chemicals into our bodies...



Who's effects we might not be able to detect...

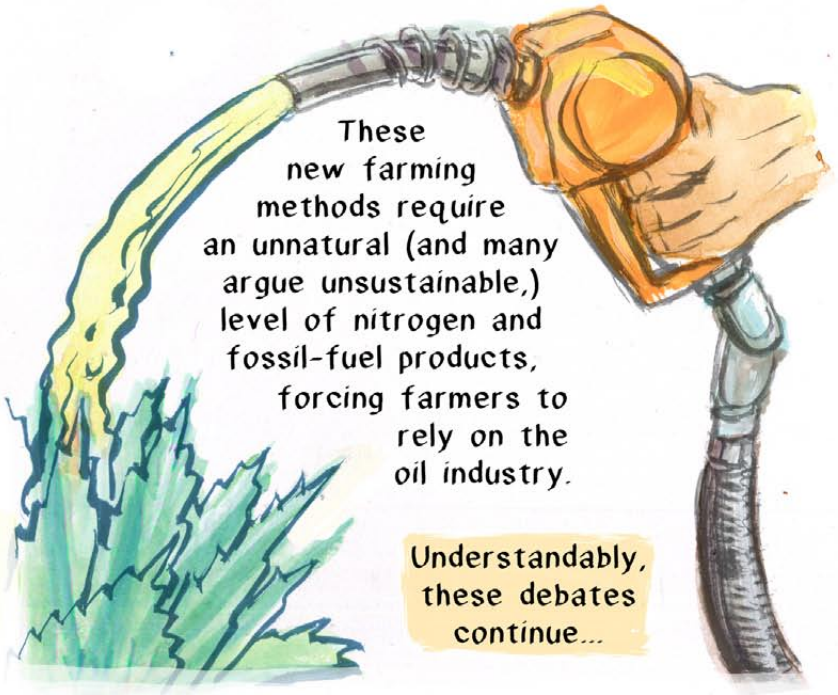
Until we have already spent years consuming them.

As we protect modern crops with pesticides, bugs and diseases evolve new immunities, forcing farmers to apply stronger chemicals in greater quantities.



A chemical arms-race between farmers and pests.

When companies create new crops, they also own the rights to them. Patenting crops could lead to big companies holding monopolies on food, and could also force out small farmers, or hinder farmers in developing countries.



These new farming methods require an unnatural (and many argue unsustainable,) level of nitrogen and fossil-fuel products, forcing farmers to rely on the oil industry.

Understandably, these debates continue...

Critics may be tempted to say that these issues were created by short-sighted, or irresponsible solutions.

But Borlaug's brillance, like that of many innovators, was to look at a problem from a new angle, which often revealed existing, unknown facets of that challenge.

The messy history of creative innovation can help us understand ways to approach modern nutritional challenges.

But what can people actually do with these lessons?

Let's take a look at some of the hard work happening in Chicago right now.

4. BUILDING AN OASIS IN THE FOOD DESERT

Chicago, the third largest city in America, is hungry.

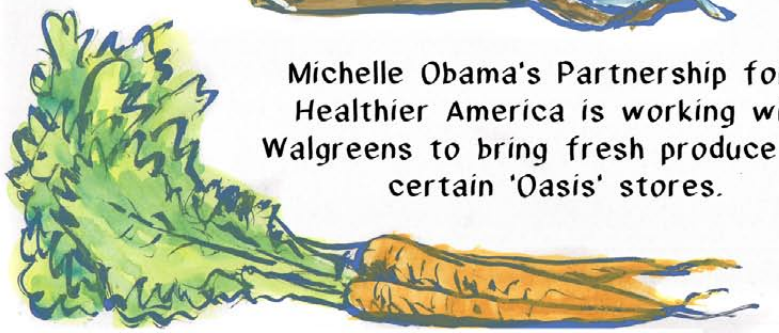
In 2010, about 902,000 people in Cook County were on Supplimental Nutrition Assistance Programs (otherwise known as food stamps.)

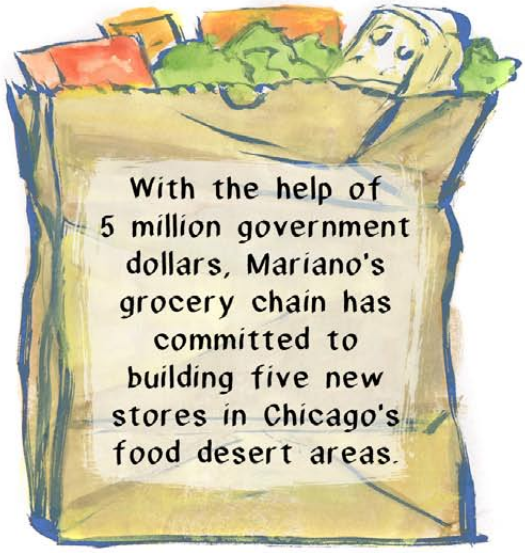
So what does that big number actually mean for the population of Chicago?

It means that **one in six** people in Chicago is hungry.

We can do better, and the First Lady agrees.

Michelle Obama's Partnership for a Healthier America is working with Walgreens to bring fresh produce into certain 'Oasis' stores.



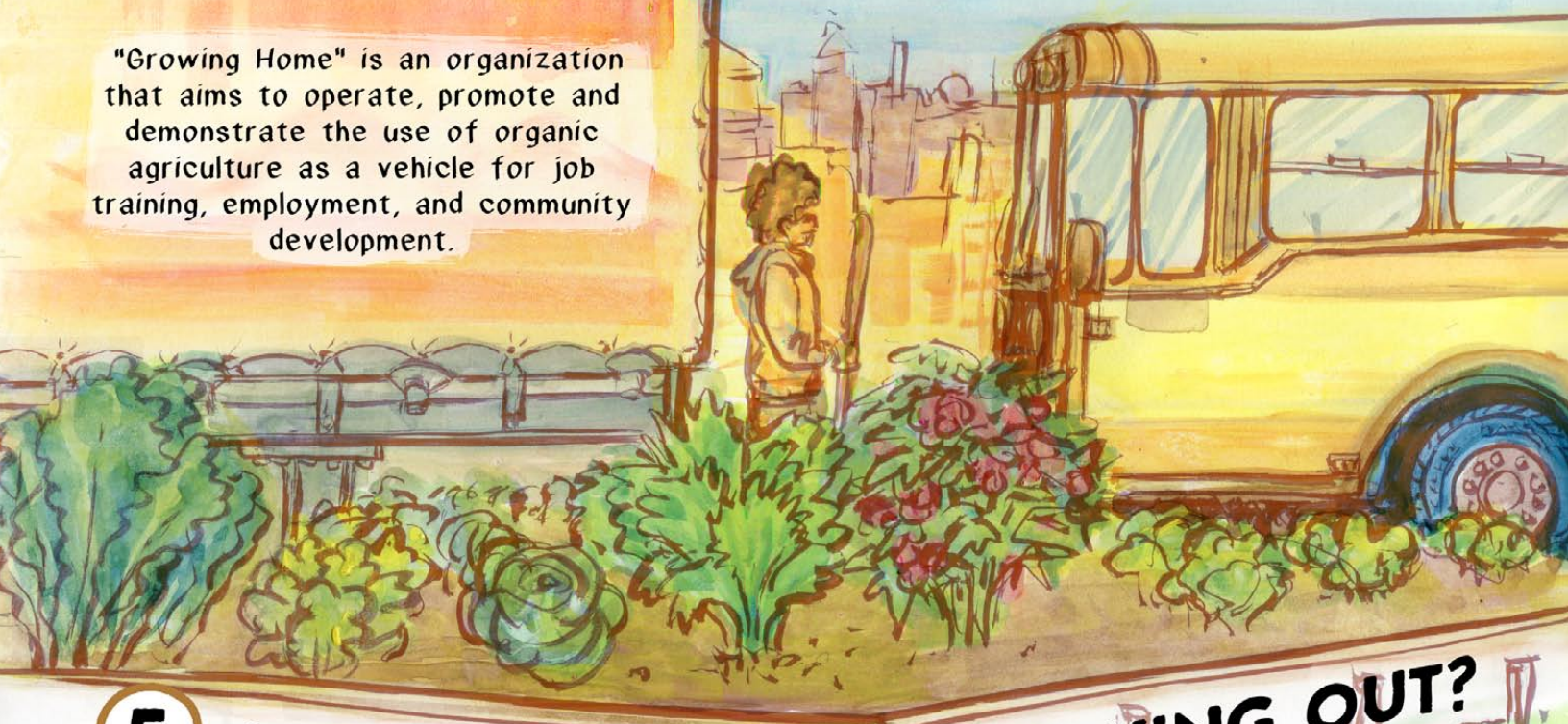


With the help of 5 million government dollars, Mariano's grocery chain has committed to building five new stores in Chicago's food desert areas.

On a community level, people have been setting up farmer's markets, mobile produce stands, and farm programs.

"Growing Home" is an organization that aims to operate, promote and demonstrate the use of organic agriculture as a vehicle for job training, employment, and community development.

"Fresh Moves" bought a CTA bus for a dollar and converted it into a mobile produce market for neighborhoods lacking healthy food options.



5. SO HOW'S IT ALL WORKING OUT?

Teachers are noticing that many young kids are getting healthier.

The rate of obese kindergarteners entering Chicago schools has dropped from 24% in 2003 to less than 19% in 2012.

B+ Good Job!

Walgreens was scheduled to convert 50 stores into produce Oasis' by 2013.

But so far, they've finished about half that.

"Growing Home" continues to help individuals flourish and find work.

However, the "Fresh Moves" mobile market is parked indefinitely.

Keeping vegetable prices low for folks in needy neighborhoods doesn't generate enough profit to keep the bus running.

It looks like access to healthy food is but one part of a few bigger issues...

"My medical bills are huge, so I hardly have any money left over for good groceries each month."

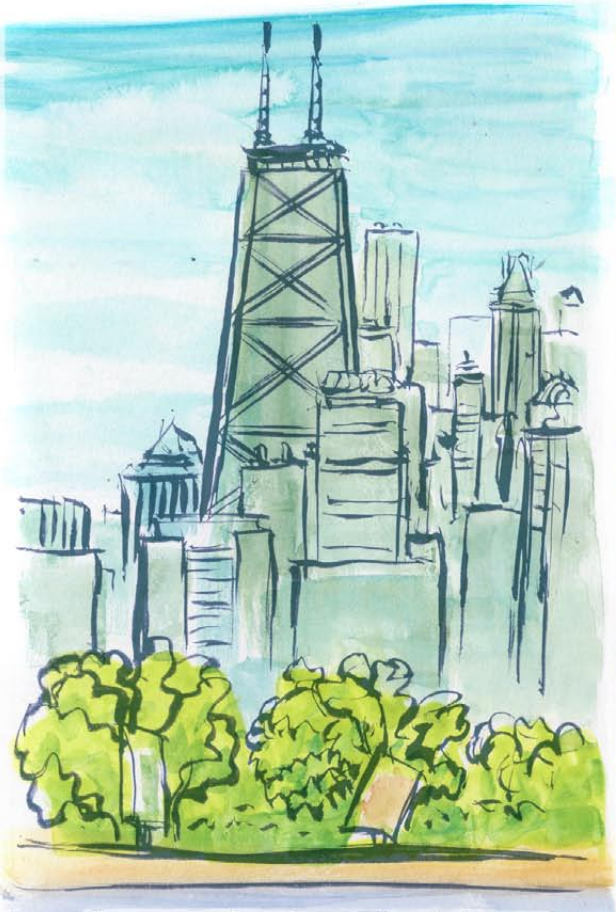
"I want to eat better, but with two jobs, I just don't have time."

"Spinach is nasty! Yuck."

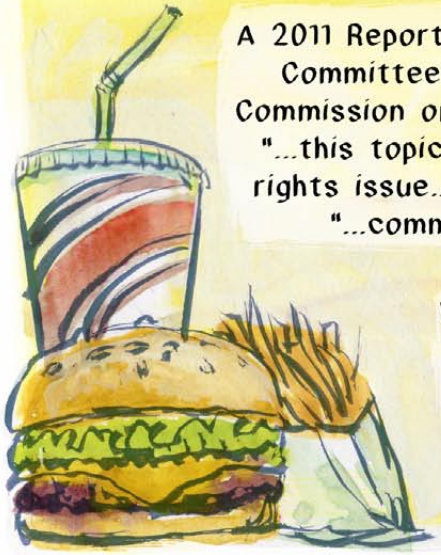
"Maybe I'll eat it on a Pizza."

"Maybe."

"Well I'm in school so I don't have much money, and anyway, I never really learned to cook all that stuff."



A 2011 Report by the Illinois Advisory Committee to the United States Commission on Civil Rights found that: "...this topics was foremost a civil rights issue..." which mainly impacts "...communities of color..."



We've got big challenges ahead, but we've also solved bigger problems many times before.

Once again, these food issues challenge us to broaden our thinking about food deserts.

Chicagoans are looking at ways to improve some of the societal issues that contribute to hunger in their city.

In a city with so many grocery bags half empty, many people are investing hard work and creativity to turn around the hunger situation, and some of them might argue that the bag is already half-full.

Chapter 5
Coming to Fruition

I'm writing to you from December—New Year's Eve, in fact. When I last saw all of the MSI fellows all together back in June, they were excited and nervous, more comfortable with each other than before, but still uncertain about whether or not they'd be able to pull off the big plans they were making. Back then, there were more fellows still involved with the project than there are today, and some of the projects that certain teams were planning have been done away with. For instance, one team had wanted to create a program that would provide urban farming and gardening jobs for ex-cons. This project and the team was dissolved, and then team members were placed on other teams. So some shuffling has happened since I last was with everyone at the round tables in the big hall at the museum.

In my last chapter it felt appropriate to present small moments I'd shared talking to different fellows specifically as individuals involved in a project. Now everything has changed: over the summer the teams worked on their own time (they didn't meet at the museum on weekends anymore) to develop the innovations that had been approved by the committees who reviewed each team's project proposal.

Here are some quick descriptions of each team's project

The descriptions are gathered from the website of the first team listed, Team L.

Team L
"Hacking Hunger: Feeding Our City"

The Hacking Hunger Festival will feature DIY (do it yourself) and DIWO (do it with others) innovations in health, wellness, food preparation, food sourcing, and food growing. The grassroots innovations will be things that can be implemented by community members experiencing food insecurity, malnutrition, and or simply want to live a fuller, more healthy life. The festival will also be a platform for showcasing innovations developed by other Art of Science Learning fellows.

Team M
"Growing Innovations"

Growing Innovations is a science and engineering curriculum for grades 6-12 being developed in alignment with Next Generation Science Standards. Its goal is to empower students to create innovative plant growing methods, solve technical problems and explore the social and cultural impacts of growing local, nutritional food.

Team O
"Crunch Time: Teen Cuisine"

This healthy cooking television/web show features short videos created and produced by teenagers in partnership with Chicago's community of video production resources such as YOUMedia. The videos will be gathered via a peer-reviewed video contest, to which teens submit their food preparation and cooking videos. "Crunch Time" will award prizes and offer other professional culinary and nutrition insights as incentive.

Team R
"Foodweb"

"Food web" is a virtual network connecting food producers, distributors and consumers with the goal of distributing information regarding availability of and access to fresh foods. Its aim is to increase the distribution of unprocessed foods, with a focus initially on fruits and vegetables, to underserved, low income communities.

Team N
"Seed Saddle"

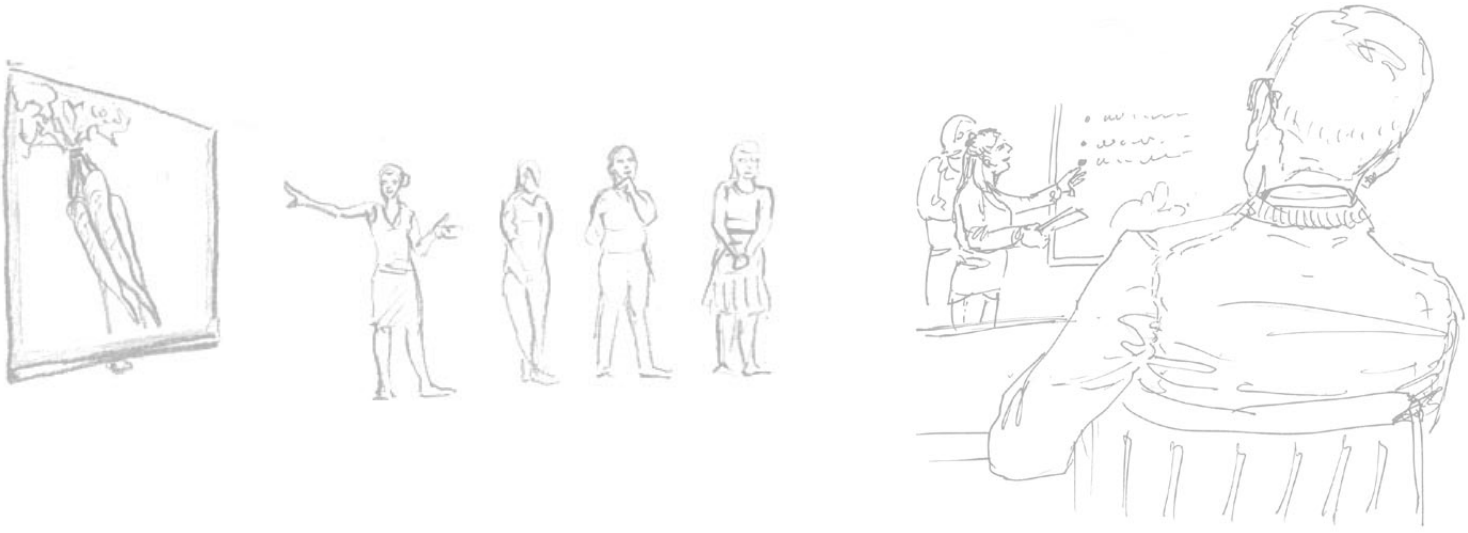
The Seed Saddle is an in-home growing system designed to straddle window sills or railings utilizing a passive watering, wicking system. Central to classroom activities and proposed horticultural fairs in schools, the Seed Saddle will have an accompanying educational web site about growing where children can post observations and photographs of their own Seed Saddle creations.

Team P
“The Movable Feast: Good Stuff”

The Movable Feast: Good Stuff is a mobile festival that brings healthy products to under-resourced communities. While creating awareness and access to “Good Stuff” in food insecure communities, the festival’s primary focus will be to stimulate buyer demand and to motivate retail carriage of healthier foods in under-resourced communities.

Team K
“Edu-Kitch”

Edu-Kitch is a portable healthy living cart to support the development of neighborhood solutions to nutritional challenges. This pop-up cart will drive behavior change through education that emphasizes the lifelong importance of eating smart. Edu-Kitch will serve nutritional knowledge throughout Chicago’s neighborhoods including understanding of labels, recipes, rationale for growing fruits and vegetables and beyond.



What Are The Teams Doing Now?

Of course, these descriptions of team projects were written and posted on Team L's website back in September of 2014. Since that time, the teams have been working to actually implement their innovations. I should mention, too, that team P ("The Moveable Feast") did not make it past the second round of committee reviews and will not be attempting to pass another review. What else have the teams been up to? I have news about a few of the teams:

Team M
"Growing Innovations"

Team M has implemented their urban nutrition middle school/ high school curriculum at Chicago's Mozart School. They have also given presentations on their unique hydroponics/ nutrition curriculum at the Chicago Southside Mini Maker Faire, and are receiving assistance in business strategy from Eckhart Consulting, a student-run organization at the University of Chicago.

You can learn more about the continuing efforts of Team M at their website: http://growinginnovators.appspot.com/project.html

Team O
"Crunch Time: Teen Cuisine"

Team O has created their own sample video, made by the teens on their team, to show potential entrants into their cooking video contest what their video should look like. They also attended YOUmedia's Open Mic Night to promote their project and get feedback from teens.

They recently presented their first cooking workshop and were happy to report that the participating teens were "really into it." One team member reported that one participating teen was initially suspicious of hummus because it wasn't made of meat but was completely won over by it in the end! [Some photos of the workshop here.]

Team R
"Foodweb"

Team R now has a simple, informative website (complete with charming illustrations!) explaining how their new smartphone app works and how it will get more fresh food to the Chicago residents who want it. [http://www.foodwebchicago.org/]

Team R has also demonstrated their app's functionality, as well as Chicago's demand for such a solution, with help from Chicago's anti-hunger organization A Just Harvest which gave Chicago residents a chance to try out Team R's Foodweb app.

Team K
"Edu-kitch"

Team K is spreading the word about their uniquely mobile learning space, presenting their innovation to Pilsen neighborhood Alderman Danny Solis and his team, to middle school students at the Union League Boys and Girls Club, at a Back-to-School fair at Ruiz Elementary School in Pilsen, and to the good people at Action for Healthy Kids, who seek to make schools a healthier place so that kids can live healthier lives.

As I've followed the work of all these teams, I've come to the conclusion that many of them (the scientists, dancers, quilters, and high-school students alike—no matter what exact field they are dedicated to) are educators at heart. They knew it wouldn't be enough to offer solutions to a problem. They also needed to educate potential consumers about the need for each solution, and then (once that was accomplished) educate potential consumers about how to get the most from each innovation and make it work—really work— within the parameters of each different consumer's daily life. What I love so much about the educational spirit is that it is inclusive; it doesn't seek to benefit from social, spacial, cultural, or economic differences—it wants to level the playing field. It wants to be accessible and engaging—it has to be aware of its audience and learn how to best engage them. It seeks to change harmful behaviors and teach helpful ones. Nothing has changed my own life so much as education, and I include under this umbrella the things I've been taught by gym teachers about how running can make you feel better when your college course schedule is stressing you out; the things I've been taught by my friends, family, and even patient strangers about how to listen to people and treat them how they seem to be asking to be treated; the things I've been taught by poems, films, stand-up comedians, HBO mini-series, podcasts, and song lyrics.

In observing the teams of the Chicago AOSL incubator I've learned that people will do something they care about for little and even negative sums of money. They will push through intense frustration, confusion, and disappointment. They will not want to let each other down. They will believe they have something to offer their local, national, and potentially global communities, and they will not want to let these communities down.

I want to remind you now, that I've been writing about real people doing real things and that you can do real things too. Maybe you'll want to begin by learning more about The Art of Science Learning, or maybe you'll want to start your own thing. Keep in mind, though, that no one involved in this particular project could have done any of this alone, not even the project's founder, even with a huge grant from the National Science Foundation. So many of us can learn and do so much with help from those who are our peers, or even from those whom we ostensibly outrank in terms of age or experience.

Really all I'm saying is join (support us in your thoughts, invest in our products, come and visit) us (educators, artists, business people, techies, families, curious observers, humans).

About the Authors

portrait by Susan Block

portrait by Nick Goettling

Hannah Gamble and Nick Goettling acted as the Artists in Residence for the Museum of Science and Industry's 2014 Art of Science Learning program. Hannah Gamble is a writer living in Chicago, Illinois, and you can follow her @Hannah_Gamble. Nick Goettling is an illustrator living in Seattle, Washington, and you can see more of his work at www.Nickalas.com.