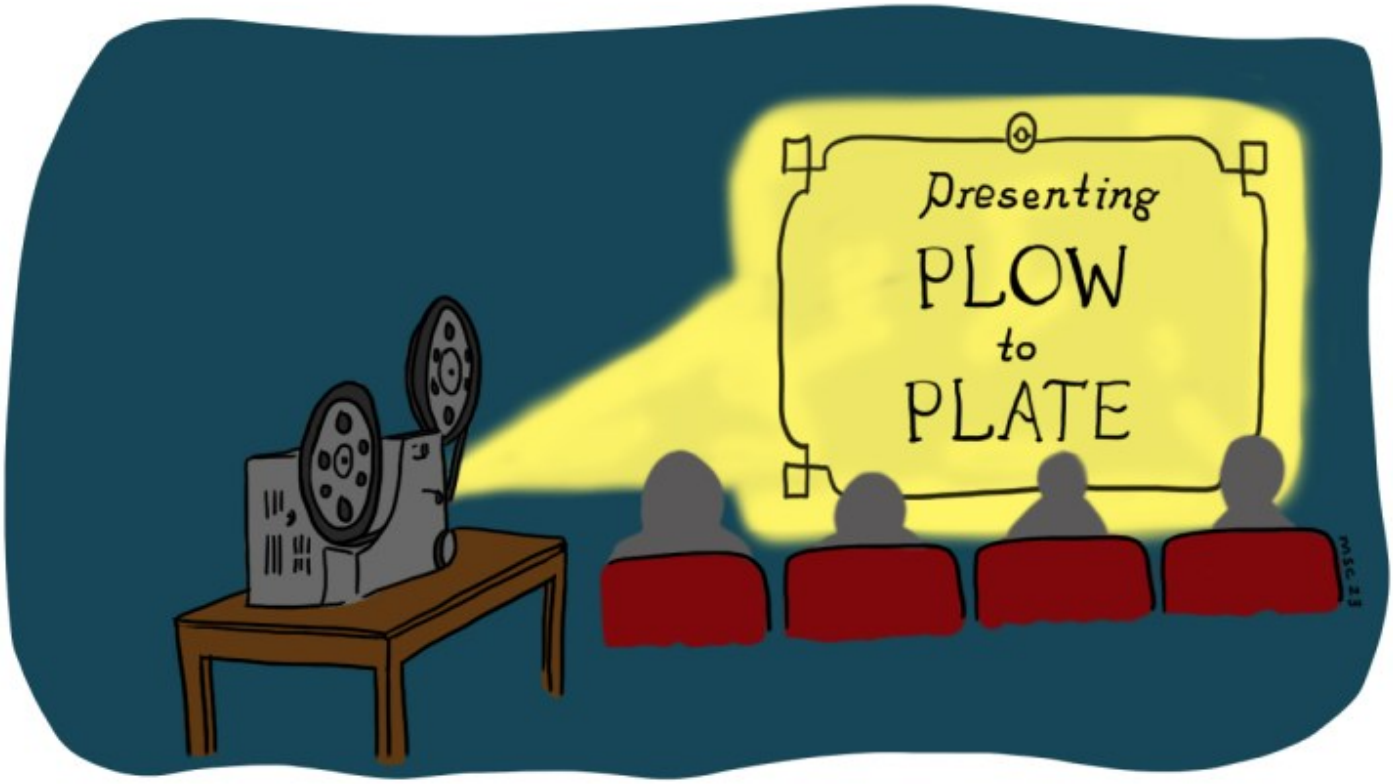
PLOW TO PLATE FILM SERIES: THE INVISIBLE EXTINCTION

October 15, 2024



By Adam Rabiner

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The Invisible Extinction is a documentary about the germs that live inside us, the tiny organic microbes, bacteria, viruses and fungi that constitute our microbiome. Though germs have a bad reputation due to their association with disease, a more recent "scientific revolution" has discovered that most of this stew is crucial to bodily functions such as digestion, metabolism, vitamin production, the immune system, response to pain and mood.

However, in recent years up to 50% of our internal biodiversity has disappeared. And though this change is little known and unheralded, some believe it is as dire as the ongoing climate disaster. In the 2014 book, *Missing Microbes: How the Overuse of Antibiotics Is Fueling Our Modern Plagues*, microbiologist Martin Blaser sounds the alarm by associating the overuse of antibiotics with rising levels of obesity, asthma, diabetes,

food allergies, celiac, autism and other conditions.

While there may be other reasons for the rise of these conditions than increased use of penicillin, antibiotics and other medicines—including increased hygiene, chlorinated water, processed foods, environmental chemicals, pasteurization, medical treatments such as chemotherapy and even the increased use of cesarean sections which eliminate the need for newborns to pass through the vaginal canal—diminished internal biodiversity has caught researchers' attention.

Other scientists featured in this film have built upon Blaser's hypothesis with their own research and clinical studies. Most prominently featured is Blaser's wife, Maria Gloria Dominguez-Bello. Dominguez-Bello, who was born and raised in Caracas, Venezuela, returns to the Amazon to collect stool samples from the inhabitants of jungle villages, such as Kanarakuni, whose traditional lifestyles and lack of exposure to the modern destroyers of our internal ecology has blessed them with rich biomes teeming with microbial diversity as well as extremely low incidence of chronic disease. For many years, Dominguez-Bello was single-handedly responsible for the storage and preservation of these stool samples containing trillions of microbes. However, as the scientific community came to realize the precarious situation of her priceless collection and prize its value, she received funding to permanently store her samples in a microbiota vault (more informally known as the "poop vault"), a repository for the future health of humanity, modeled on seed vaults.

Just as seed vaults preserve and protect plant biodiversity that can enhance food production as climate conditions change, the hope is that these rich stool samples may someday provide remedies to chronic diseases. In fact, stool-based medical procedures have already begun. Fecal Microbiota Transplantation (FMT), for example, is a treatment by which a healthy person's feces are injected into the colon of a sick patient suffering from the drug-resistant gut pathogen *Clostridioides difficile (C. diff)* in order to restore gut balance.

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An Israeli study led by a pair of researchers, Eran Segal and Eran Elinav, investigated whether fecal capsules could pinpoint the actual microbiome bacteria and combination of foods that contribute to weight loss and normalize blood sugar levels. This work seeks to develop the next generation of targeted probiotics and has led to personalized diets for diabetics and an app used by two of Israel's largest HMOs. Groundbreaking research is also taking place in China, where Dr. You Xin is treating autistic children with a combination of diet, fecal pills and FMT, to promising results. Meanwhile back in New York City, Dominguez-Bello is conducting a study to determine if swathing newborn babies delivered by caesarian sections with maternal birth canal microbes leads to healthier biomes; elsewhere in the United States, doctors are attempting to discover if fecal capsules can combat obesity.

All this research has led to improvements in how and when to use antibiotics and new microbe therapies for Alzheimer's, bacterial vaginosis, kidney stones, Parkinson's, MS, cancer and even Covid. It has also led to a resurgence in popularity of certain probiotic foods and beverages, such as naturally fermented sauerkraut, kimchi, pickles, yogurt, kombucha, cheese and dietary supplements (many whose effectiveness has not been verified).

It is safe to say that Blaser's best-selling book, resulting podcasts and films like this have put a spotlight on the lowly microbes. Hopefully, this greater understanding and appreciation for the complex worlds within our bodies has helped shed their invisibility, halt their extinction, and even restore them to their prior glories.

The Invisible Extinction was screened on October 8. Click here for more information.

To be added to our mailing list for future screening announcements, please email a re-

quest to plowtoplate@gmail.com.

Adam Rabiner lives in Ditmas Park with his wife, Dina, and child, Ana.

A TALE OF TWO PICKLES

October 15, 2024

Ingredients for a vinegar pickle: red onions, jalapeño, garlic, salt, sugar, water, vinegar.

By Travis Hartman

The pickle has a proud and multifaceted heritage. Pickling is a great tradition spann-

ing millennia. Pickling preserves food, enhances taste and also aids nutrition and digestion.

Within the realm of pickles and pickling there exists a distinct and often misunderstood divide. Do you find yourself mystified about the secrets that lurk under the brine? Then come along and allow me to submerge you in the details.

There are many types of pickles. There also exists a great split in the way they are created. One pickle is made slowly; the other, quickly. One type of pickle uses the acid in the brine, while the other creates its own. Making both types of pickles takes roughly the same amount of work.

The quick version is as simple as it gets: Mix water and vinegar. Dissolve salt and sugar in the vinegar/water mixture. Heat it up, let it cool and pour over vegetables in a jar. The acetic acid in the vinegar (it needs to be at 5% or more) rids the brine of any micro-organisms and preserves the vegetable by preventing spoilage. There you have a pickle, quickly.

The other version has a recipe that is actually even simpler than that. The technique is a bit more nuanced but all you really need is water and salt. Mix the two to make a brine, pour over vegetables and wait three to five days. This brine is the perfect environment to stave off bad bacteria (the kind that makes food rot) and allows good bacteria to flourish (the kind that makes food taste good). The good bacteria is called *Lactobacillus*, and over time will convert some of the sugars in the vegetable to acid. This is what we want. This is the beginning of the pickle action we’re looking for.

Salt, carrot batons and water for a lacto-fermented pickle.

The acid provides the resounding sour flavors and keeps the food safe by stopping the bad bacteria from taking root. After five days or so, taste a little of your newfound treasure and, if it is as sour as you want it, throw it in the fridge to stop the growth and keep it where it's at.

Now let's be clear—not all pickles are fermented, and not all fermented things are pickles. Pickling does more than make food taste good; the process of pickling creates food that will stay fresh in your fridge for several months. The art of pickling is a magical science—you can do it reliably over and over again. And homemade pickles are versatile! Put them on a charcuterie board! Top your foods with them! Use your homemade pickled veggies to balance rich meals and impress your friends and neighbors. They'll never know how easy the veggies are to pickle. So quick. So tasty. So good.

When you’re really ready to step your pickle game up a notch, try your hand at fermentation. It’s arguably easier than a quick pickle, but requires patience. This is the same process used to create yogurt, cheese, beer, wine and bread (sourdough, specifically), so you are in good company.

There is a wide world of vegetables the can be pickled. Fermenting vegetables will make pickles that will not only impress your friends and neighbors, dear reader, but through the course of lacto-fermentation, I dare say you may breach the realm of also impressing the toughest customer out there—yourself.

RECIPE: QUICK PICKLE BRINE

Vinegar pickle in a jar: red onions, jalapeño, garlic, salt, sugar, water, vinegar.

1 cup vinegar (white, rice, apple cider)

1 cup water

1 tbsp kosher salt

1 tbsp sugar

Directions:

Mix, heat, let cool and then pour over veg packed into a (very clean) ball jar.

Red onions are a great first attempt. Slice thin and pack with garlic and jalapeño for a Mexican twist. Any veg will work, though some dense varieties like carrots should be peeled and sliced into batons for maximum flavor penetration. Trim ends off green beans. And, of course, the cucumber is welcome here, too. Use fresh herbs to punctuate and refine flavors. Place in fridge and chill for around two days for flavor to emerge. Will keep for two months or more.

RECIPE: FERMENTATION BRINE

Carrots in brine ready for lacto-fermenting.

Dissolve 1 tbsp kosher salt per cup of filtered water. (Chlorine may mess with the ferment)

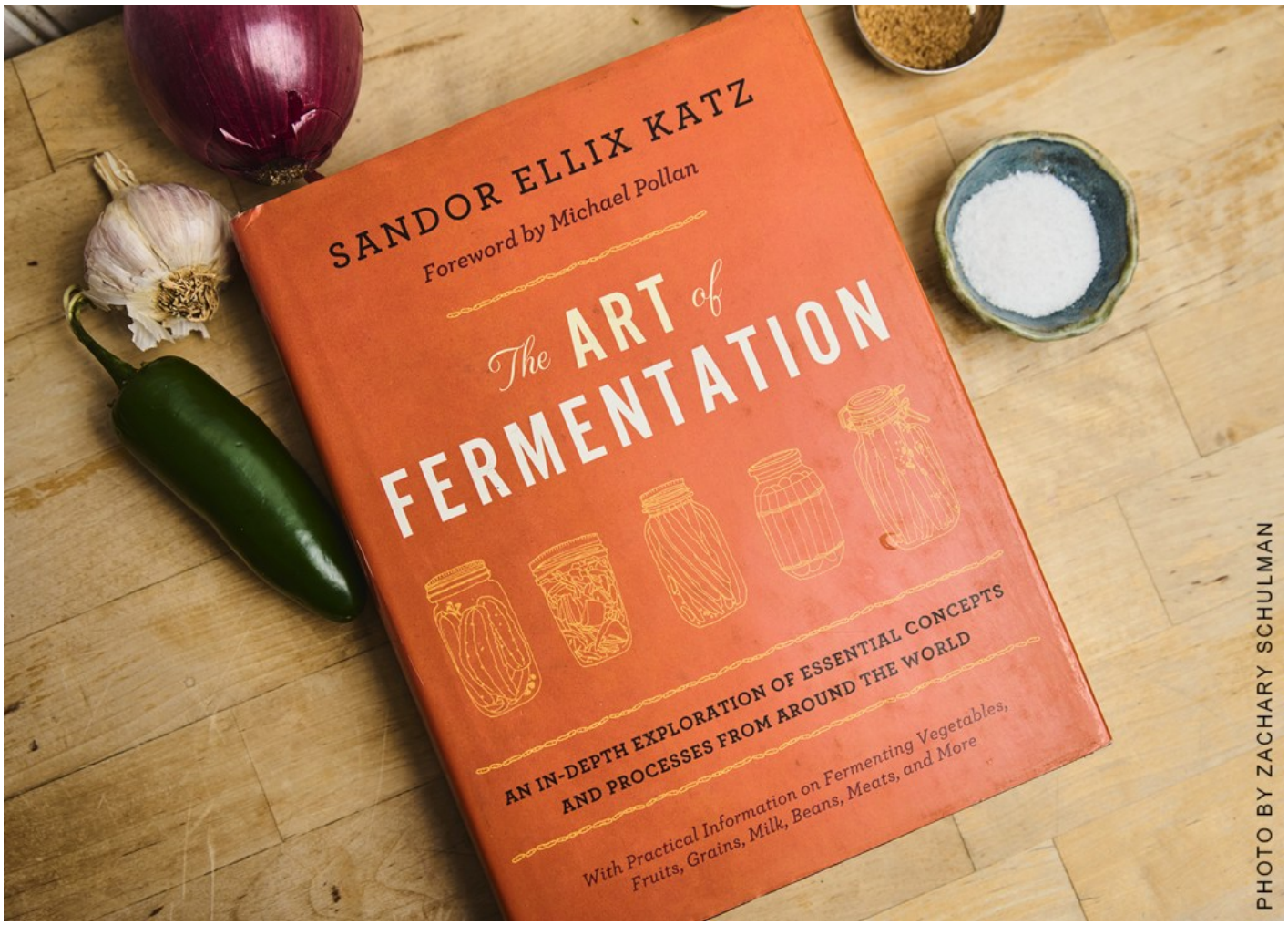
Directions:

Pour over fresh sliced veg in (very clean) glass jar. *It is very important that all vegetable matter is submerged or it may grow mold that you definitely do not want.*

Screw on lid (loosely, so eventual gas can escape) and place in a warm spot that is between 65–75 degrees. Temperature will affect the growth of the good bacteria, and within a few days you should see bubbles, which means they are at work!

After a few days, inspect your jar. All still under the brine? Bubbling and starting to

smell sour like a pickle should? Fish one out and take a bite and see if it meets your approval. Each jar will be different based on what's in it, the temperature and a million other things, but if it tastes nice then throw it in the fridge, which will basically stop the fermentation—and your pickles will be preserved until you get to the bottom of the jar.



The Art of Fermentation is for sale at the Coop.

For further reading on fermentation, find *The Art of Fermentation* by Sandor Ellix Katz, a bright orange book often on sale at the Coop. It is a delightful tome of encyclopedic fermentation knowledge.

Travis Hartman has been a member of the Park Slope Food Coop since 2010. His favorite part about the Coop is the wide variety of messages heard over the PA while shopping.