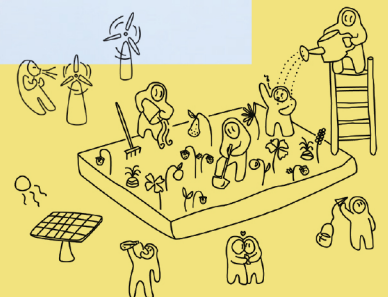


KOMBUCHA, KEFIR & NATURAL SODAS

A SIMPLE GUIDE FOR
CREATING YOUR OWN



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& Sebastian Landaeus





INTRODUCTION

In this book we lay out some simple techniques for preparing a variety of fermented drinks. In the first section, the more curious among you can read about the origin of naturally effervescent drinks and the health benefits associated with them. Here we also explain the equipment you'll need and the basic hygiene rules to follow in order to safely get started at home. After that we guide you through the various ingredients you can choose from and expand on different fermentation methods to give you a clear idea of the processes involved. Remember: anyone, anywhere, can do this, and using the most basic tools. In fact, human beings have been fermenting longer than they have been writing, making pots or farming the land. You can do it in your kitchen with everyday utensils. Fermentation is easy and exciting. The microorganisms are versatile and adaptable. Of course, there's plenty to learn about getting each style of fermentation right, but the fundamental processes are simple and straightforward.

First of all we introduce and give detailed explanations of the processes behind the most well-known fermented drinks: kefir, kombucha, ginger bug, etc. Each time, we set out the entire process on a timeline so that you can follow every stage: preparation, fermentation, harvesting and second fermentation. After that, we suggest some original and simple twists on the basic recipes to allow you to experiment with flavours and train your palate – we want even beginners to love fermented drinks as much as we do!

The key to success is to familiarise yourself with the various fermentation techniques and follow their rhythm. This book will get you there. To your jars!



THE HISTORY OF BUBBLY DRINKS

Before we get stuck into the detail of the recipes for our favourite fermented drinks, it's worth you knowing a few things about bubbly drinks.

IN THE BEGINNING

The first fermentations in human history were a result of human error and sheer dumb luck. Beer, wine, kefir, and even cheese and sauerkraut were all happy accidents when it comes down to it. But having seen how fermentation could be used to preserve foods, make them more easily digestible and improve general health, man quickly set out to reproduce this phenomenon.

The magic of fermentation was occurring all over the world, among diverse populations, without necessarily any overlap. In one way or another, almost every civilisation developed its own fermentation processes.

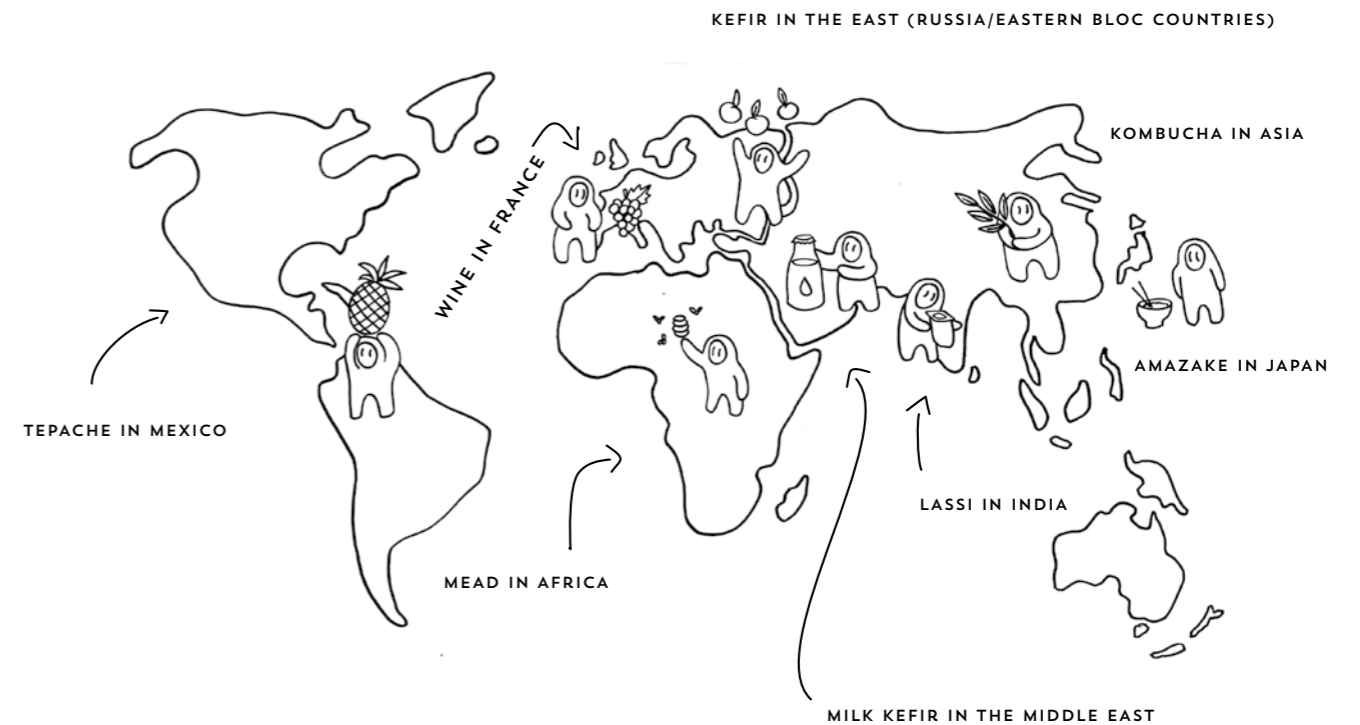
These techniques saved people from famine during poor harvests. In the absence of refrigerators and freezers, fermentation allowed people to preserve food, meaning rations could be stockpiled. Thanks to fermentation, liquids no longer stagnated and outlived water or juices.

did you know?

Liquid fermentation was also an instant hit thanks to its exciting ability to kick-start the development of alcohol in certain drinks (wine, beer, mead, etc.). It's worth noting, in any case, that natural fermentation can only yield alcohol content up to 18 proof. Anything above this is achieved by human intervention in the form of another method: distillation.

HOW FERMENTATION LED TO THE INVENTION OF AGRICULTURE

The production of fermented liquids such as beer and wine turned out to have a huge influence on human settlement. For example, wine-making from wild grapes preceded viticulture. Originally, people would gather these small berries while wandering in the countryside. It was only once they pressed the grapes and allowed them to ferment that they discovered wine and decided to settle and cultivate wild vines. The same is true for grains such as barley and wheat, and for cheese.



In this way, as incredible as it might seem, it was a desire for wine, beer and bread that led people to farm the land, and not the other way around! In fact, we humans cultivated microorganisms long before we started rearing cows and sheep.

did you know?

The anthropologist Claude Lévi-Strauss argued that mead production marked mankind's passage from nature to culture.

FERMENTATION AND INITIATION RITUALS

As Marie-Claire Frédéric shows in her reference book *Neither raw nor cooked*¹, fermented flavours are complex ones that we learn to appreciate as we mature. People seldom love coffee, cheese and later, a glass of wine or beer, the first time they taste them. To enjoy eating fermented foods is a sign of having become a fully fledged

member of one's community of peers, and well rooted in one's culture. In every cuisine in the world, the relationship with fermentation is a result of this learning, and a true 'rite of passage'. Every country has at least one fermented food that is considered a strong symbol of its identity. Internationally, isn't France known as the country of camembert, baguettes and good wine (three fermented foodstuffs)?

The difference between a fermented food and a rotten food depends on its geography and the cultural context of the person consuming it. You only have to look at the American reaction to French people eating those very smelly and runny cheeses... or the faces of westerners when they hear descriptions of Chinese century eggs!

¹ Marie-Claire Frédéric, *Neither Raw Nor Cooked: History and civilization of the fermented food*, Alma, 2014.

THE ERA OF (OVER-) CLEANLINESS

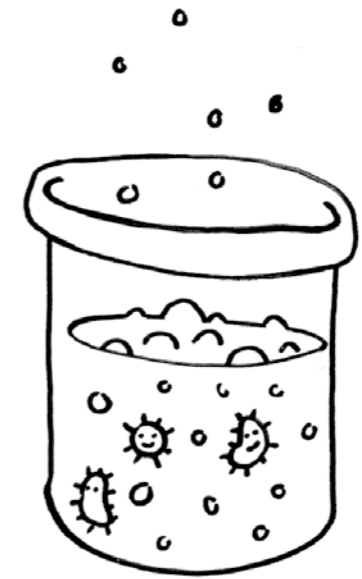
Cleanliness, anti-bacterial soap, antibiotics... western culture has become terrified of germs and obsessed with hygiene. We associate microbes with dirt, illness and epidemics. However, modern science has shown that bacteria are also our friends, especially when it comes to our immune systems and intestines. Without them, quite simply, we wouldn't be able to live. Bacteria clean us, protect us from illnesses and allow us to absorb nutrients. Unfortunately, in our struggle to eliminate all forms of bacteria using more and more powerful cleaning methods, we're helping a new breed of hyper-resistant bacteria to emerge, one that we don't know how to tackle. That's not to say that we should ditch basic hygiene, just that we need to stop demonising bacteria as a whole and instead try to reintroduce them into our daily lives in an intelligent way.

THE DRAWBACKS OF INDUSTRIALISATION

The discovery of sterilisation in Pasteur's time was a real liberation for the food industry. Suddenly, 'stable' products with a long shelf life could be produced on a very large scale. An economic boon, since it guaranteed efficiency and the potential for higher turnover. On the other hand, the sterilisation and standardisation of the food industry have grossly undermined the nutritional value of food. Sterilisation has made new generations wary of products containing natural living things, or that taste a little different – things that move, change, swell, and produce bubbles – when in fact all of those are the most natural things in the world.

In the past, beer, bread and cheese were made and consumed locally, and differed from one place to the next. Food standardisation processes were developed to satisfy supermarkets' need for stabilisation and profitability. That's how so many local fermentation traditions have been lost with the passage of time.

The solution to the global phenomenon of junk food is a return to terroir, to local and seasonal food production on a human scale, to traditional ways of preserving food that don't use too much energy, that are slow and simple. Fermentation is *slow food* at its best. Another advantage of fermentation is that it enables us to rediscover a taste for homemade food. It can be disconcerting at first if you're not used to it. Fermented products have flavours that are more difficult and more complex than those favoured by the food industry. But as soon as you've trained your palate... it's win-win!



did you know?

The word 'ferment' comes from the Latin *fervere*, which means 'to boil'. Indeed, a fermenting liquid does look like it's boiling because of the bubbles it produces.



OUR TIP

Read food labels carefully: a lot of fermented foods that aren't homemade are pasteurised or heat-treated, processes that lengthen their shelf life but destroy their precious microorganisms.

THE HEALTH BENEFITS OF FERMENTATION

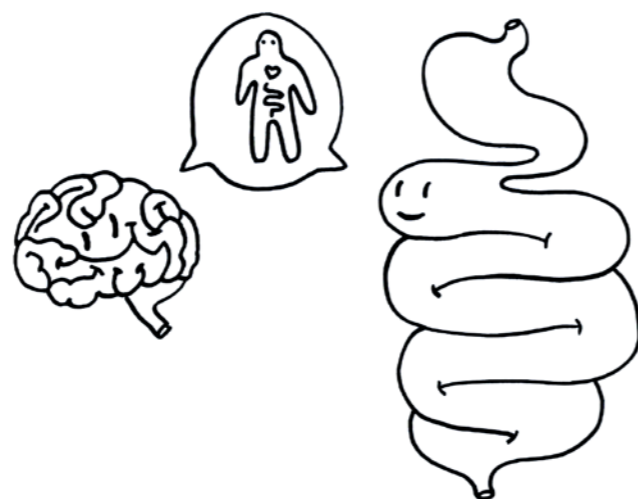
So... what's the link between fermentation and health? Bacteria, that's what! They're everywhere, from the start of the fermentation process to the insides of our stomachs during digestion. Bacteria are responsible not only for digesting things inside our intestines, but also things outside of them. Bacteria aren't happy simply breaking down our food for digestion, they also reduce it into molecules that are more easily absorbed by our bodies: this is called bioavailability. Besides that, the microbial community makes vitamins, breaks up toxins and medicines, and strengthens our immune systems. And all those things are a big plus for our health!

THE STOMACH, OUR SECOND BRAIN

Just as Giulia Enders tells us so brilliantly in her best-selling book *The Subtle Charm of the Intestine*², we humans are inhabited. Yes, it's true! And not by just anyone, thanks very much. Our intestines play host to around 100 trillion bacteria (or about 2 kg/4 lb 6 oz of the average adult's total body weight). Today, some scientists even consider our gut microbiota to be an independent organ. So, more than 95% of the bacteria on our planet are harmless to humans. And a significant number of them are actually some of our best allies because they protect our gut, gathering in the exact places where pathogenic agents would like to do us harm.

All the microorganisms that populate our digestive tract are known as 'intestinal flora' or microbiota. Intestinal flora act like a barrier in our intestines and protect us from external attacks. Scientific research has also shown that a healthy gut positively influences not only our immune system but also our mental health. That's why the term 'second brain' is increasingly used to refer to the stomach – or, more precisely, the gut, which reports directly to the brain on matters that are top secret and greatly affect our subconscious. Fascinating!

² Giulia Enders, *The Subtle Charm of the Intestine*, Actes Sud, 2017.



did you know?

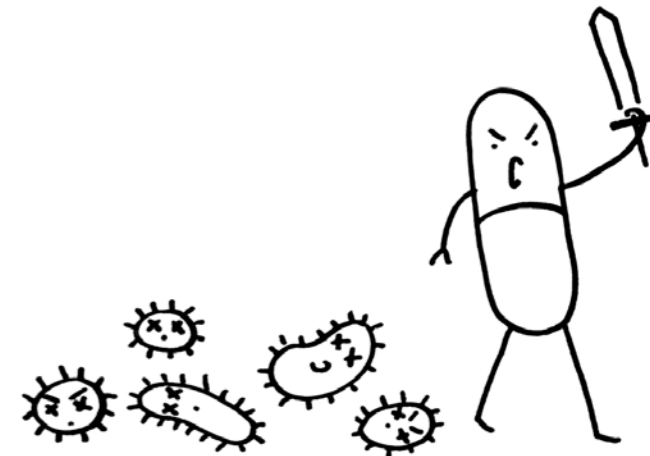
Back when we still didn't know much about bacteria, we classified them as part of the plant kingdom – hence the name 'intestinal flora'. The term 'flora' might therefore not be exactly right, but it does allow us to imagine what we're talking about. From a scientific perspective, if we're being precise we should talk about microbiota – from the Greek words for 'small' and 'life' – to describe the population of microbes living inside us.

ENDANGERED MICROBIOTA

We need to realise that in this day and age, the balance of our gut flora is constantly endangered, in great part due to our hygiene-conscious tendencies. Unfortunately, when we imagine the microorganisms contained in food, the first that come to mind are disease-causing ones.

We consume too many antibiotic or antibacterial products, we overdo it with the disinfectant and, at the same time, through pasteurising all of our foods, we don't leave any room for bacteria to thrive. Only now are we starting to understand that it's not in our interest to exterminate every single bacterium. The key is to find a healthy balance between a sufficient quantity of good bacteria and a non-dangerous amount of bad bacteria: it's an intelligent way to protect ourselves from true danger and to encourage beneficial bacteria in a targeted manner.

A clear conclusion can be drawn from our actions over the last few decades: species of good bacteria are disappearing and researchers believe that their extinction is linked to current epidemics of obesity, inflammatory disease, digestive pain and even Alzheimer's.



For all these reasons, the problem of gut flora imbalance occurs too frequently these days and many of the people affected haven't even made the connection between cause and effect!

This imbalance affects everybody differently. The main symptoms are: constipation, bloating, abdominal pain, food intolerances or allergies, nutritional deficiencies, fungal infections, skin problems, hormonal disorders and mild mental disorders (lack of concentration, anxiety, depression), etc.

did you know?

Intestinal flora starts to breed from the moment we are born and is unique to each individual and his or her way of life. This influence starts from birth: the microbes our mothers had, whether we were born vaginally or via caesarian, whether we were breast-fed or not, our environment (town or country), our surroundings (pets), our food (raw or pasteurised), the levels of cleanliness to which we were exposed (too disinfected or not disinfected enough), the medical treatments we were given (unnecessary prescriptions of antibiotics) and the microbes with which we came into contact (travelling, etc.).

STRENGTHENING GUT MICROBIOTA WITH MICROORGANISMS

As we were saying before, nowadays scientific discovery after scientific discovery are proving the extent to which bacteria are essential to us. Thus, maintaining our gut microbiota can help to improve our health. This maintenance consists of providing the bacteria that already exist in our gut with prebiotics that feed them, plus a few probiotics to give them a bit of help from time to time. Bacteria are at their most beneficial when they're at their most diverse.



THE BENEFITS OF PROBIOTICS

We can care for our gut microbiota by eating small quantities of fermented food each day – thus enriching it with other populations of microorganisms. Fermented foods help the gut to retain sufficient quantities of friendly bacteria to protect us should a rogue pathogen try to colonise our organs. However, it's important to understand that the microorganisms in our diet won't necessarily settle permanently in our intestines. These days, probiotics are a

treatment more than a cure. After taking a course of antibiotics, it's better to repopulate your intestinal flora rather than to leave that space vacant. That's what probiotics are for: they help the intestine to rebalance after the dangerous microbes have been eliminated. When we stop taking them, it's up to our gut flora to keep us safe.

THE RIGHT BALANCE

You don't have to be swallowing capsules every day to get probiotics into your body. By varying the fermented products in your diet (drinks, vegetables, yoghurt, etc.), you can ingest beneficial microorganisms from natural sources.

Fermented foods offer a wealth of health benefits, but they're most effective when consumed in small quantities and often. You shouldn't overdo it; instead, make sure you eat a varied and balanced diet containing raw, cooked and fermented foods (just a little of the latter every day is enough). By all means dive into fermentation and become an expert on the subject if you wish, but remember that a diet that is balanced and varied is key to good health.

GRADUAL INTRODUCTION

If you're completely new to fermented products, start introducing them into your diet gradually. They are full of bacteria, so suddenly flooding your digestive tract with them could have unwanted side-effects. The best thing to do is to increase the doses little by little. Start with half a small glass per day. Once your body has become used to this, keep increasing the quantities until you start to feel the benefits of what you're drinking.

THE BENEFITS OF FERMENTATION

- It helps digestion.
- It increases enzyme production.
- It's a source of vitamins.
- It stimulates gut flora.

