

BREAD

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BREAD

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CONTENTS

3 WELCOME!

A few words from the editor who is becoming obsessed by interesting flour.

5 WHERE DOES FLOUR COME FROM?

A visit to one of Finland's finest traditional flour mills.

15 KEEPING THE ART OF ARTISAN MILLING ALIVE

Raluca Micu visited Shipton Mill, an artisan mill known since Domesday, and asked them tough questions about milling and flour.

33 A BAKER AND HIS MILL

Josey Baker runs a bakery-café called The Mill, named after the mill that grinds the flour for the bread—inside the bakery.

40 AN HONEST GLUTEN FREE BREAD

Can gluten free bread be good, natural, and made without artificial additives? Yes it can. This article will get you started with making it yourself.

49 BUCKWHEAT ARTISAN BREAD

Chris Stafferton presents us with a recipe for a good loaf of gluten free bread.

53 BACK TO THE WOOD-FIRED OVEN

An interview with Richard Miscovich—baker, teacher, and wood fired oven enthusiast—on making the most of your oven.

62 THE BAKER'S PEEL

Jesse Merrill shares his most beloved bakery tool: the hand made unloading peel.



WELCOME

WHEN I FIRST DECIDED to try baking my own bread, I went to the supermarket and bought a bag of flour. I guess that's how most of us get started: We learn that to make bread, you need flour. And flour is flour. So, we buy flour, mix a dough, and bake bread.

But slowly, I started to notice that there are big differences between flours. Not only between different grains such as rye and wheat (or the more delicate difference between wheat and spelt) but also between the seemingly similar all-purpose wheat flours.

I realized that the flour sold at the supermarket wasn't all I had to settle with. A good, organic flour grown, ground, and sold by a farmer became available at a

nearby store. I loved it. When I had to bake bread away from home, I brought some of this flour with me. From time to time, I mixed in some strong white flour or a generous sprinkle of coarse rye flour from Vääksyn Mylly (see page 5)—if I had some available; Vääksyn Mylly is not that close to where I live.

THE NEXT EYE OPENING experience came only last month when I went beyond the borders of my home country and ordered flour from England. This is when my recent obsession with flour began: the entire world seemed to be at my doorstep. I bought a 15 kilo package of flour, including some amazing stone ground chestnut flour, from Shipton Mill (see page 15) and baked more bread. Then, I found and ordered white stoneground flour as well as some oak smoked flour from [Bacheldre Water Mill](#). Ordering from Amazon, I didn't even have to pay for shipping!

Oh, how I enjoy even just smelling, tasting, and comparing all these flours.

So, while flour is the most important ingredient in bread, for me, it seems it is also becoming an obsession—a feeling not too uncommon among bakers, I believe.



WHERE THE FLOUR we use comes from matters, and the attention the miller put into his work shows. That's why in this issue of Bread, we return to flour.

Two mill visits—Raluka Micu visited Shipton Mill and I spent one morning observing the work at Vääksyn Mylly—will give you a better idea on how good flour is made and who the people who make it are, and hopefully will inspire you to look for good mills and great flours near to where you live.

However, if buying good local flour isn't an option (I do recommend ordering some flour by mail once or twice just for the experience, but as a long term solution air mailing flour is far from sustainable), you will find inspiration from the experiences of Josey Baker who has just started milling the flour for his bakery and his customers.

Maybe you'll be the one providing yourself and your neighbors with great flour for years to come?

FOR SOME OF US, good flour is bad flour. As a topic we haven't touched on earlier in the magazine, this month, we present an introduction to baking good, real, and gluten free bread.

With the help of Sadie Scheffer and

Chris Stafferton—bakers who are making gluten free bread in the spirit of honest handmade production we all believe in—you will learn the basics of gluten free baking, which you can then put into practice by following the recipe for Buckwheat Artisan Bread on page 49.

AFTER ALL THIS TALK about flour, we look at the oven: Richard Miscovich will share his insight on getting started with wood-fired oven baking, and Jesse Merrill will present his favorite bakery tool: his handmade unloading peel.

I HOPE you'll enjoy the magazine as much as I enjoyed putting it together!

And as usual, if there's anything you want to ask, comment on, suggest, and so on, I'm looking forward to hearing from you. Just send me e-mail.

Also, the year is getting close to its end, so stay tuned for news about 2014 (there might be some good Christmas presents ahead...) and let me know what you would like to see in the magazine!

Happy baking!

— Jarkko







WHERE DOES FLOUR COME FROM?

RICHARD SCARRY'S 1968 book, [What Do People Do All Day?](#) is one of my all time favorite children's books. The style, probably a bit old-fashioned already in the time the book was published, is like a breath from a past time when things were simpler and it was still possible to understand what people did for a living. A farmer grew food, a carpenter built furniture, and a miller milled flour.

[Vääksyn mylly](#), a traditional village mill roughly 125 kilometers north from Helsinki, Finland, could be the mill from the book's section on flour making. The mill has got its share of old, interesting ma-

chinery, and the flour and grains move through pipes and chutes that form a network just like those Scarry so enjoyed including in his drawings. You know, those drawings with arrows showing which way grains and flour (or in many cases, water) are moving at each step of the process.

DESPITE THE MACHINERY involved, flour milling at Vääksyn Mylly is driven by people at every step. There are no computers involved.

Millers start and stop the machines when needed, adjust the millstones, sew the sacks of flour once they are full, block-

ing the stream of flour with a piece of wood to give them time to switch flour bags. Nothing is automated in the modern sense where all you do is press a button and wait. This is a process that leads to workers who feel proud of what they do, to good flour, and to a group of loyal customers.

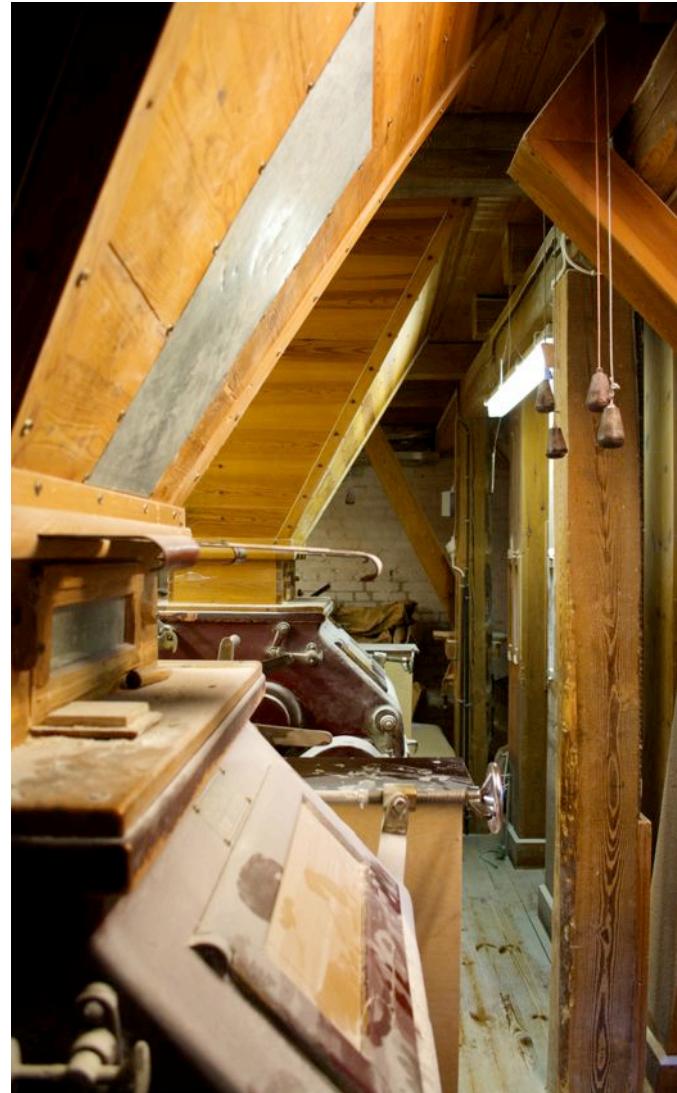
And very loyal they are! Kari Savola, CEO of Vääksyn Mylly, told me that they have customers who come all the way from the outskirts of Lapland, driving some six or seven hundred kilometers once or twice a year to buy enough flour to last until their next trip south. Some, once they make it home, share the flour with neighbors and relatives.

That's dedication. But more importantly, it's a reaction to finding a good flour you like to bake with, made by people who you like to do business with. People like Kari Savola and his employees.



THIS ARTICLE began writing itself long before I made my trip to Vääksy this September.

In the spring of 2012, shortly after I had visited *Viipurilainen kotileipomo*—a bakery that bakes their traditional 100% rye loaves using rye flour milled at Vääksyn





Mylly, Kari and I connected on Facebook. Thanks to the baking brothers at Viipuri-lainen kotileipomo, we looked each other up and started to like and comment on each other's posts every now and then.

Later, we met at local food events in Helsinki, where I always found Kari with a wide grin on his face, whether he was selling flour or giving my two sons (both of them big fans of Kari) caps with the mill's logo printed on them. Now, when I think of a miller, I think of Kari.

And so, when I got the idea of visiting a mill to find out where flour is made and how, he was the first person to contact. I sent him a message asking if I could come and take a look at the work at the mill, which he immediately agreed on.

After some arrangements, one September morning, long before sunrise, I jumped into my car to make it to the mill before it opens at seven—to get the most out of the visit and still make it back on time to pick my children from day care at noon.

VÄÄKSYN MYLLY opened in 1942 and it looks like it hasn't changed much since then. In the early days, the mill generated its own electricity from the nearby rapids, and you can still find the electricity meters and switches on the walls of the small of-

"Since then, the world around the mill has changed but inside, not very much. While big mills put their faith into more modern equipment and automatization, at Vääksyn Mylly, there has been no need to replace what is working."

fice, next to a big sign with the mill's logo and original slogan: "Expertise and good machines bring us new customers." Customers in this case meaning farmers wanting to get their grain milled, which was the most typical customer request at the time when Finland was still very much an agriculture economy.

Since then, the world around the mill has changed but inside, not very much. While big mills put their faith into more modern equipment and automatization, at Vääksyn Mylly, there has been no need to replace what is working.

If someone comes with a bag of grain and asks for it to be milled, the answer still is: "How would you like us to mill it?"

A GOOD EXAMPLE of this attitude was when one of the millers, Vesa, showed me a few bags of rye flour ground from a customer's grain.

The grain had been in storage for maybe ten or more years and was already turning gray when the customer decided to find out if it was any good anymore. Not very good, Vesa told me, but proceeded to tell that they milled the flour anyway, adjusting the milling stones in a way to make it possible to grind it into flour despite the low quality of the ingredient.

"Whether they can bake bread with this flour or not still remains to be seen."



WHEN IT COMES TO FLOUR that Vääksyn Mylly produces and sells to bakeries and home bakers, however, the mill is very particular about accepting only top quality ingredients.

Many farmers bring or send them samples of their grain hoping to sell it to the mill, but only the best grain gets accepted. Farmers know that if Vääksyn Mylly takes their grain, it's something to be proud of. And as the mill pays a premium compared to bigger mills, it is also good for their businesses.

"For rye, we have our own laboratory," Kari Savola told me. "We measure the falling number—that's important. And impurities. And moisture too. For rye, the goal is a falling number between 90 and 140."

THE FALLING NUMBER is a measure that determines the amount of sprouting that has happened in the grain (rye or wheat). If the grain has been exposed to too much water or moisture at the late stages of cultivation, for example during harvest, it may have begun to sprout—even if the effect

might not yet be visible to the human eye. This will lead to an increased production of alpha-amylase in the grain, which in turn makes the flour unsuitable for bread making by breaking the starches into simple sugars (you can see the same effect in action if you add a too high proportion of diastatic malt into your bread dough).

The falling number is measured using a tool developed just for this purpose¹. First, the grain sample is ground into flour, mixed with some water in a test tube, and then placed in the machine. The machine first heats the sample by placing it in a boiling water bath while stirring it up and down. After sixty seconds, the stirrer is dropped and the machine just measures time: The number of seconds from the beginning of the heating to the moment the stirrer reaches the bottom of the test tube is called the falling number.

As the count begins the moment the machine begins heating the sample, the minimum for falling number is 60.

1: For a clear explanation and demonstration of the falling number test, you can [watch this video](#).



"This year we got grain samples that we had to discard as the number was 60—that's the lowest number in the measure. We don't accept anything below 90." Kari told me.

"We have one big silo for grain batches with a falling number between 90 and 120, one for 120 to 160, and one for higher numbers. Then we can adjust the percentages and create a grain mix with a number between 100 and 140 in the final flour."

WHILE VÄÄKSYN MYLLY uses roller mills for making their wheat flour, all of the rye flour produced at the mill is still ground using a stone pair. And clearly, there are no plans for giving up this traditional way of milling the flour; as we walked through the mill's basement, Vesa showed me a pair of stones waiting to be put in place when the current stones go past their best days.

Most of the mill's customers are small bakeries and restaurants, each coming for a specific type of flour or oats ground to their specification. Most of the time, they want rye, the flour that Vääksyn Mylly is best known for.

Increasingly, however, the company has been turning its attention towards individual home bakers who value great flour and can afford to pay a premium on



"While Vääksyn Mylly uses roller mills for making their wheat flour, all of the rye flour produced at the mill is still ground using a stone pair. And clearly, there are no plans for giving up this traditional way of milling the flour"



it. People such as the family that buys tens of kilos of flour at once or someone like me who comes every once in a while and buys maybe 10 or 15 kilos to bring home to bake bread with.



ONE OF THE GUIDING principles at Vääksyn Mylly is supporting local agriculture and food production. As a big proponent for high quality Finnish crops, they are not trying to grow and be among the biggest mills in Finland. They just want to keep doing what they do—mill the best of the grain grown near the mill into the best possible flour—and do it well.

Employing six full-time workers and some more in the summer, Vääksyn Mylly is a small scale operation, one of some tens of remaining small mills in the country (compared to hundreds just a few decades ago). Looking at those statistics, the future doesn't always look bright, but after a few harder years, the mill is now on the way to a positive result this year.

People are beginning to appreciate the message that Kari has been pushing since the beginning of the 2000s: for the Finnish countryside to survive, we need to learn to appreciate local food grown and produced by people you can know by name.



TO MAKE THAT HAPPEN, Vääksyn Mylly has been building a mutually supportive network of small businesses in its region. In the friendly and homely atmosphere of their mill shop (when you visit the mill, you get to buy the flour in the very same room with the old roller mills that are used for milling the wheat flour), you can buy not only flour from the mill but also products from other local producers, such as flat-breads, cookies and apple juice.

And in November, there are plans for organizing a bus trip to take people from the nearby city of Lahti on a shopping round through the important local food producers in the area, among them, Vääksyn Mylly.

"People are getting interested in where their food comes from." Kari says.

"I see people with thermo bags—they have been visiting Heinola's Heila² from Helsinki to get some specific products. Especially now, in autumn, people who have been staying nearby at their summer cottages, stack up on flour for the summer on their way home."

2: A local food market / farmers' market roughly 50 kilometers from Vääksy.

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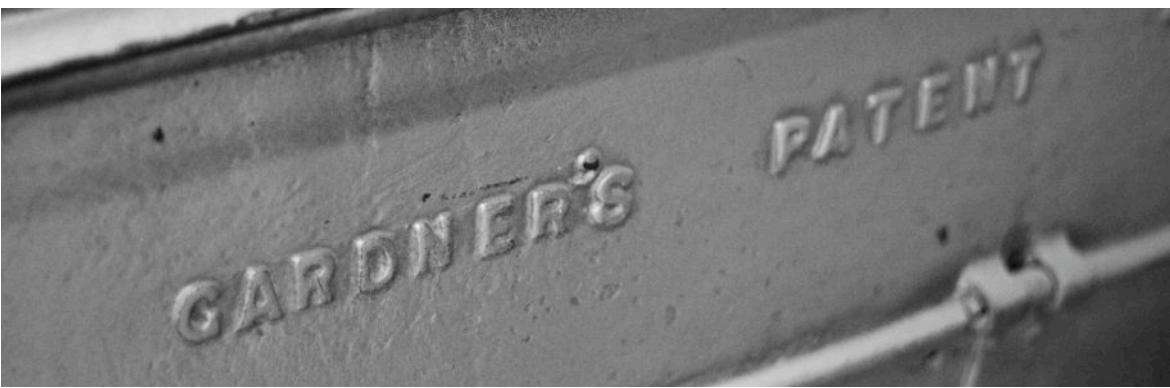
FOR THE VISIT, Kari granted me full access to the mill, and so I walked around taking photos, looking at the millers at work, asking them questions about their work and the flour, and just admiring the surroundings where these people work every day.

The environment in a mill this old is something very special: A light layer of flour dust covers the surfaces. The old machinery does its thing with wheels and bands rotating everywhere, transporting power from one place to another and moving flour around the tall building's different floors. The wooden surfaces that have lived through decades show signs from a past well-lived in a way that many try to emulate in interior design—but no matter how hard they try, the real thing is always the real thing.

THE ENVIRONMENT, the flour, and the people will surely bring me back to Vääksyn Mylly many times in the future.

And if you are in Finland, I suggest you do the same. Tell Kari I sent you.





KEEPING THE ART OF ARTISAN FLOUR MILLING ALIVE

by RALUCA MICU



THESE DAYS, I keep reminiscing about my childhood quite often. I think about how everything was calm and slow and people really enjoyed what they were doing and did it thoroughly and passionately.

I can clearly remember the patience my grandfather would put in building a clay oven in his back garden, or the attention my grandmother would put in weaving thin leather strands loaded with small colourful beads into intricate designs to be added to my lovely celebration shoes.

It's true that life changes, society changes, and people and things need to evolve, but I wish we'd have a speed limit. I hope each of us is still able to stop for a second, breathe in and see the world

around us, treasure the simple things and just enjoy it all.

A FEW MONTHS AGO, I started using Shipton Mill flour for my baking and fell in love with its quality and flavour. So I was very happy when the opportunity arose to visit one of their mills.

Shipton Mill Ltd. is currently operating two sites: the traditional mill in Tetbury and a modern mill in Frampton-on-Severn, both producing high quality artisan flours. It is one of the twenty-four milling companies left in England—the French have more than two thousand.

The old mill, one of the few traditional mills left in the UK, is set in the beautiful

Cotswold valley near Tetbury and has been producing flour since the time of the Domesday Book¹. In those days the mill was the centre of social life and villagers and farmers would personally bring their corn to be milled. This isn't happening anymore, but the stone-ground flour that bears the historic name of Shipton Mill is still made with traditional French Burr millstones and with as much of the grain sourced locally as possible.

THE GUIDE ON OUR tour of the mill is John Compton, one of the millers at Tetbury. He is sixty-two and has been working at Shipton Mill for the past twenty-six years—and declares that he is "never going to retire" from it.

Compton tells me that the owner, John Lister, got so tired of eating poor quality bread that he decided to buy a mill and start producing artisan flours that will make bread both healthy and tasty. After some searching, in 1981 Lister discovered this beautiful but derelict building, bought it and with hard work reinstated it to its old purpose.

The mill is no longer powered by the water wheel as in the old days, but there are plans to have the wheel working again, to provide electricity to the offices, mill, and cottages on the site.

THE TOUR of the mill is quite amazing. The site is small and looks very much like in the old days, but it has got a certain elegance and draws you to discover its secrets.

It is impressive to see all the 1930s machinery looking sparkling clean and still running and to listen to the miller talk about his day at the mill, the grain and flours that he proudly handles and produces.



John: THE TRADITIONAL MILL here at Shipton Mill is very much the specialised end of the milling spectrum where the roller mill only runs at a tonne an hour and the stone mill only a third of a tonne an hour.

Raluca: *How does that compare to commercial milling?*

John: WELL, the mill at Frampton-on-Severn, a modern mill compared to this one, runs at about five tonnes an hour, and any big commercial mill will run at say thirty-five to forty tonnes an hour.

Ours is a very high spec traditional whole meal.

"The site is small and looks very much like in the old days, but it has got a certain elegance and draws you to discover its secrets."

1: Domesday Book (Latin: *Liber de Wintonia*)^{[1][2]} is a manuscript that records the great survey of much of England and parts of Wales completed in 1086. The survey was executed for William I of England (William the Conqueror): "While spending the Christmas time of 1085 in Gloucester, William had deep speech with his counsellors and sent men all over England to each shire to find out what or how much each landholder had in land and livestock, and what it was worth" (*Anglo-Saxon Chronicle*).

[Source: [Wikipedia](#)]





Raluca: Will customers be able to tell the difference?

John: WELL IT'S ALL FLOUR, it's all the same. But we choose our grains very carefully and we treat them very sympathetically. We create heat, but we create the minimum amount of heat necessary, so we end up with a high spec flour.

Raluca: What types of flour do you produce at this traditional mill?

John: I HAVE NEVER MADE white flour. We only do wholemeal flour at this plant as we haven't got enough room to do white as well.

They say we have a very simple job: everything that comes in we make into flour. However, it is a very tactile, hands-on job. In other modern mills you work remote, but here you are actually, physically in amongst the grain. You are sampling it, milling it, packing it.

The whole mill is about people. The experience of the people running it determines the flour.

ON THIS SITE, we do both stone-ground and roller ground flour, but what makes our roller ground unique is that all of our equipment is from the 1930s. We also

have a special piece of equipment: the stone grinder that grinds the wheat before it gets to the first roller mill.

So again, it's a unique product as we keep all the good bits from the grain in rather than removing them.

Raluca: Tell us a bit about how the entire process works.

John: WHAT HAPPENS IS the grain buyer based in Frampton will buy the grain. Hopefully it will be organic, as we have to get organic grain wherever we can.

But wherever it comes from—whether it comes from just up the road from the Duchy's, Prince Charles's home farm or it comes in a tractor and trailer, or in a big great lorry with twenty, twenty-five tonnes on it—we cannot take it as being correct, even if they tell us it is.

I still have to test it.

So I get in the back of the lorry and we spear the load in eight places to get a representative sample throughout the load. We can't afford to take any bad load. Other mills can because they can blend it out, but we've got very small facilities for holding grain so we rely on nothing but 100% good quality grain.

I then run the sample through all the tests: for protein content, moisture, water

absorption, development time, and stability and check the results against our contract to make sure the batch is within spec, because when you guys get the flour, if it is not within certain parameters, then it won't perform and you will get small loaves or loaves with big holes in them.

IN THE MILLING PROCESS, we have our own recipe book and every hour we check the flour to make sure everything is in spec. The protein and moisture won't vary, but we are just checking to make sure the machinery is fine and that a screen hasn't broken. When we are running with stones, we check them every half an hour because they do tend to move about a bit more.

Also, I know it sounds silly, but you have to listen to the mill. It's like a car engine, you know when it's going right and when it isn't, so when it changes pitch you know something is going wrong. It's down to your experience to know where the problem is, so basically we listen to the mill all the time.

All the flour I've produced is then blown out of the mill into a tanker and then taken to Frampton where they have a computerised packing line. It is more cost effective this way, even though some of the flour might come back on a lorry in 25 kilogram sacks to be distributed here. We

do very little packing here—only for the 1 and 2.5 kilograms bags.

AT THIS PLANT we also do all the specialised mixing, like the Light Malthouse or Three Malts and Sunflower Brown Flour. A lorry comes with ingredients every day, Terry mixes them, and then the final product is taken away to be distributed from the warehouse.

This site also doubles up as a shop, which is a very successful part of the business. It is great to have it here as it means we are involved in the entire life cycle of the flour from grain to actually delivering it to the end customer.

Raluca: *What is special about this mill and its buildings?*

John: THE BARN where the mill is set dates back to the 14th century.

MANY YEARS AGO, we had a bad fire which burned down the original barn. The insurance company at the time was going to put a very cheap and nasty building back up.

At that time we were doing more of the experimental work for the Duchy Originals Biscuits: we would know the product here, would go to Walkers in Scotland, they

would produce the biscuits and send them down to Highgrove, then Prince Charles would arrive here with John Lister and they would check them out.

Whether Prince Charles got involved or not, I don't know, but someone certainly got involved, because sourcing a 14th century mill in Herefordshire, stripping it down on site, rebuilding it in an aircraft tanker to fit the footprint, and then putting it back here on the footprint of the original building is not an easy job.

We are really glad they did because it is very much in keeping with the rest of the building.

Raluca: *What is Prince Charles's association with the mill?*

John: WELL WE'VE GOT the Prince's crest for producing flour: "By appointment to HRH The Prince of Wales, Flour Millers, Shipton Mill Ltd." His home farm Highgrove, which is very close by, has our flour and also Buckingham Palace has some of our flour.

WE CARRY ON with the tour of the mill and John explains patiently what every piece of machinery does and how the grain is treated every step of the way to end up with the best results.

John: ALL OUR STONE GRINDING is done using a pair of French Burr stones.

They are the best stones you can get.

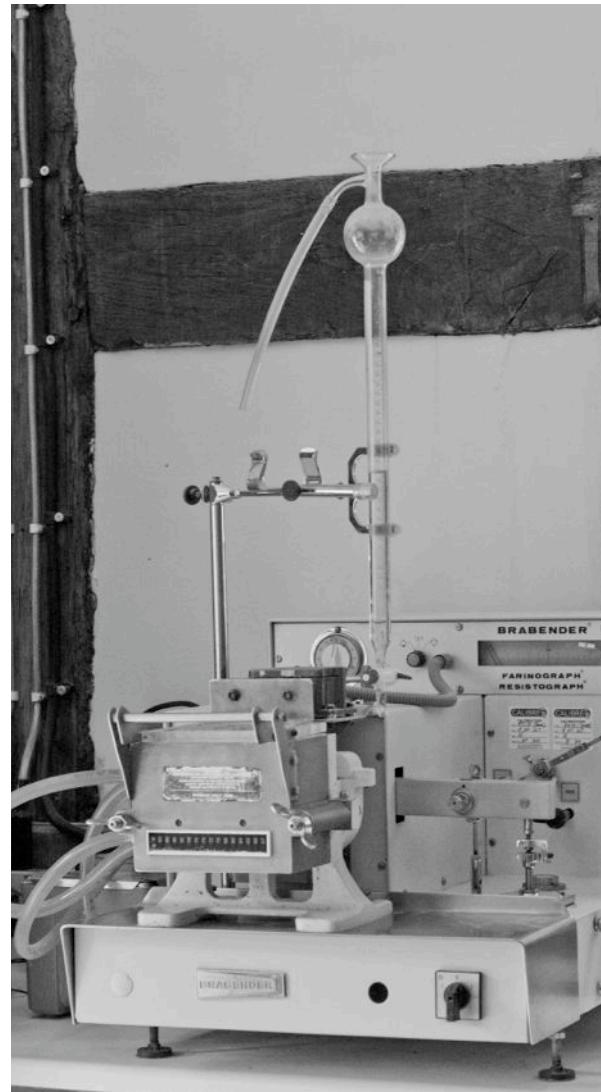
English stones run out very quickly because they are made of sandstone and from time to time they leave bits in the flour that you might bite down on accidentally. These ones don't, they are magnificent.

Raluca: How does stone grinding work?

John: IT IS AN EASY but very skillful process: The clean grain is vibrated on top of the stones; the bottom one is stationary and top one is powered by an electric engine. The grain travels from the middle to the exterior where it is milled. Then the flour travels by air to the top of the mill where we put it through a very coarse sieve, because we only get one chance of making the flour and an occasional grain escapes with the flour. So all it does is it takes out that whole grain.

We can control the coarseness of the flour: the closer the stones the finer the flour. But if you put the stones too close to each other they will explode.

When they are running together, they do a third of a tonne an hour, so it is very slow. We can't really make enough flour to satisfy all the demand.



Raluca: Tell us a bit about the roller milling process.

John: AT THIS MILL, we use roller mill equipment built in the 1930s. I've got two roller mills here that can work at one tonne an hour. What makes them unique is that they are using natural stones.

The roller mill system is called a reduction system. Every time the grain goes through a roller mill, it goes through a sieve, so that if you have 100% going into roller mill one you get maybe 1% that's good to go, and the vast majority goes into roller mill two. Everything that comes out of the last roller mill is OK.

We don't waste anything: all the good bits of bran are reintroduced in the flour after it's milled, so it is 100% wholemeal. Everything else like shrivelled grain goes into animal feed. We used to burn most of it, but now we have a biodynamic gardener and he turns it into compost.

THE MILL is in perfect shape and looks like it has been transported here from the 1930s. As opposed to all new mills which are, as John says: "very sterile, with grey steel and big walkways everywhere", this one retains its warmth due to all the varnished wooden floors and old, but refurbished machinery.

John: THIS IS very much like an old sailing ship, people are saying.

Raluca: Tell me a bit about a regular day at the mill.

John: I HAVE BEEN here 26 years. I work from 8 o'clock in the morning to 7 o'clock in the evening. We all do 10 hours shifts, but I can do 12 or 13 because part of my job is filling a tanker with flour at the end of the day.

I depend on our drivers to come pick up the load. If they hit an accident or a traffic jam, they are delayed and so am I. I can't really tell my wife what time I am coming home for tea.

It's an unique job, a very hard one.

JOHN SMILES and continues:

EVERY DAY I'm shovelling grain!

We carry 32 kilo sacks around the mill and my boss says: "I am saving you money! This way you don't have to go to the gym."

It does keep you very fit.

It is a very labour intensive job, and I don't know if others are prepared to follow us on. It's quite difficult to find anyone to take our place; they do want to be millers, but in modern mills, not here.

"We don't waste anything: all the good bits of bran are reintroduced in the flour after it's milled, so it is 100% wholemeal."

Raluca: It sounds like this is the most specialised job.

John: IT IS. You are driving lorries around, testing the grain, milling it, delivering it to the customer. You are virtually a part of all stages of the process, doing everything.

It's all very specialised and the quality of the flour ultimately comes down to your experience as a miller.

THE VISIT at the mill was a special experience and of course I couldn't leave this wonderful place without taking home some of their flours: chestnut flour, some strong white Canadian flour and a newly launched mix of white seeded flour.



TO FIND OUT more about the business of milling I had a chat with Sam Livy, Online Development Manager and Tom Russell, Sales and Marketing Manager at Shipton Mill Ltd.

Raluca: How important is your relationship with the local farmers?

Sam: THE GRAIN is the most important thing for us: We are always trying as much as we can to get organic grains grown lo-



cally.

Just this morning, we had a tractor and trailer coming from a farm just down the road and unloading some beautiful organic English rye that is very appreciated by our customers.

There are situations when we can't really source what we need locally, either because that type of grain is not grown in the UK or because of harvest period, so we tend to import high quality grains from other countries as well—like the really hard wheat that we currently buy from Kazakhstan or a low protein organic variety that comes from Romania.

WE ALSO HAVE farms that grow wheat especially for us. For example for our traditional organic white and wholemeal flours, we use a rare variety of wheat called Maris Widgeon. For every acre, Maris Widgeon yields almost half the amount of modern varieties, but its quality and flavour are so excellent that we believe it is worth paying a premium to farmers who continue to grow it for us.

Raluca: Who are your customers?

Sam: PEOPLE WANT more and more flour from us. They start as home bakers and some of them slowly start baking for

friends and family, then for market stalls and even open small bakeries. And without even knowing, they start buying twenty-five kilogram sacks.

We sell to artisan bakers all over the country, and small shops. Our online business is also currently thriving and more and more people order specialty flours online—especially the ones they can't get in their local shops.

Raluca: Do you have people interested in buying grains, to mill at home?

Sam: PEOPLE DO COME AND ASK for grains as some have small hand mills or even electric mills, and we usually try to satisfy all of their requests.

We do need advance warning to be able to help them and they will probably need to buy 25 kilograms sacks, but we do get the occasional request.

Raluca: What are the varieties of stone-ground flour that you produce? How do you decide which way to mill each type of flour?

Sam: WE CURRENTLY only produce whole meal flours using the stones.

All the white flours are done on a roller mill. This is because producing white flour

"They start as home bakers and some of them slowly start baking for friends and family, then for market stalls and even open small bakeries. And without even knowing, they start buying twenty-five kilogram sacks."

using stones would mean lots of wastage and we wouldn't be able to produce the amounts that we need in the time that we need to actually make this a viable business.

Raluca: How do you decide which mixes to produce, which specialised flours?

Tom: THERE ARE SPECIFIC types of grain like chestnut or rice or buckwheat that people are interested in. You make the flour because people buy it. It's not a question of deciding which grains to use; you have a demand for chestnut flour, you make chestnut flour.

The difficulty comes when you make different types of wheat flour: You may want to make a low protein or high protein wheat flour but you might not have that type of grain at the time. So then you have to blend different wheats together in a process called making a grist.

We have an expression: "It's all grist to the mill." Grist basically means what you feed the mill to give you a known product at the end of the milling process.

A MILLER USES quite a clever system based on his own experience and a lot of calculations. For example, if he mixes a 14% protein and a 12% protein flour to-

gether in a 50/50 mix as a grist, in theory, he will get a 13% flour in the end. Also this changes throughout the year: as the harvest changes around the world, you get different types of grain.

At the end of the day the baker wants consistency and the same quality of flour throughout the year, so as the harvest changes, you need to adapt your grist so you can end up with the same property of flour at the other end.

That's the miller's skill.

Raluca: *Is stone milling better than roller milling?*

Tom: THEY ARE DIFFERENT things. Would you get better flour from one or the other? No. You would get different flour.

Stone grinding is wonderfully traditional and wonderfully old fashioned, but it is also quite slow in terms of its output. So, if someone wants twenty tonnes of organic whole meal flour, to do it on the stones would take a really long time, whereas to do it on the rolls would only take four hours.

Also the stone grinding makes a much coarser flour on the whole, so its also much less sympathetic when it comes to making certain types of bread, because it

makes for a denser loaf, due to the fact that it has large bran particles in it and bran particles are heavier, they pierce the gas bubbles and the loaf sinks.

THERE ARE LOTS of purists who would jump up and down: "You have to have this." But actually you probably don't have to. It depends on what are you making and what your values are.

Also, you don't get the variety from stone grinding that you can get from roller milling. We couldn't do all the things we want to do with stone grinding. It wouldn't be a business, it would be a weekend hobby—for people to come and buy a few kilograms of flour.

So stone grinding is not really commercially viable on a big scale, you just can't do it.

Raluca: *I guess people think that the roller milled flour is the awful one they get in the supermarket.*

Tom: YES, it's because they think it's all made by machines.

But you know, the big mills mill on the same equipment that we have but probably three times as much in any given time. They just mill it really, really hard because they don't care about the end product.



"The big mills mill on the same equipment that we have, but probably three times as much in any given time. They just mill it really, really hard because they don't care about the end product."

People who buy from us would like to have stone grind, but we couldn't do the volume. But what they really want is nicely produced flour. They understand that it is roller milled, but they also understand that it is probably not being beaten up as much by us as by a big commercial miller.

Raluca: Do you think organic flour as opposed to non-organic flour makes a difference in the taste of the end product: the bread?

Tom: I THINK it's more about how the grain was grown and not necessarily if it is organic.

It is more the environmental story: it's better for me and it's better for the planet if it's organic and there is no two ways about it. If you go to an organic farm, it's been demonstrated that the variety of wild life and the variety of species is far greater on an organic farm than on a conventional farm, where you tend to have a monoculture. When you have a monoculture growing continuously, you end up with limited species and diversity.

HAVING SAID THAT, there are loads of people for whom organic is too expensive. They just can't justify the 20% premium in their stores or for their particular customer

base, but they still want to offer something that's nicely produced so they come to someone like us and say: "Look, I know you do organic, but can I have some of your non-organic flour, because you probably damage it less than the big mills?"

Raluca: What is your opinion around using aged flour versus fresh flour?

Tom: SOME PEOPLE find that aged flour behaves in a more consistent manner, because the longer you leave it the more the aromatics that are present in flour will come off and the enzyme activity will calm down. Therefore aged flour will possibly give you a more consistent result.

Is it a better result? I don't know.

Depends on what sort of bread you are making and the skill you have as a baker.

There are people, I know a couple of bakers in London, who mill the flour every morning and use it as they are milling it. They say it gives them a far more vital product and probably might do. I think it depends on the system you like to use as a baker: your perfect loaf depends on you as a person or you as a baker.

We have some bakers that demand to have flour of a certain age. So we would mill it and stick it in a tanker and we would leave it. And then we have guys who don't



care about that, they just want good quality flour.

Two different bakers making the same sort of loaf can use two completely different types of flour. Their water hardness might be different. Their machinery might be different. Their skill might be different. Their mixers might have different types of arms. So we need to try and match a flour to the baker's process more than just to say "this is what you use for that," because different people bake in different ways.

BAKERS ARE REALLY particular about their flours.

Let me give you an example: Our flours go out in different coloured bags. The organic number 4 flour is usually packed in an orange bag. If we've run out of the orange bags, we might use our grey general purpose bags and send the flour to the baker in them. He will ring up the next day saying "It won't work, it's not the right flour!" and we would take the flour back, rebag it into the orange bags and send the same flour back to the baker.

The next day he will be: "Fantastic, thank you very much!"

That is because he doesn't believe it is going to work. He doesn't put the same energy or the same belief into making the



bread that day. Whereas if it is a machine you just push a button and here comes the perfect sliced loaf for you 45 minutes later, there is no skill in that.

Raluca: What do you think the challenges are for you? There are loads of people today who still don't understand that good bread starts with good flour and also they don't really care about good bread. Does that make your job harder?

Tom: THERE ARE LOADS of people who don't care about bread and they go and buy really cheap, convenient bread from the supermarket and then they worry why their son or daughter gets all bloaty, because supermarket bread is not fantastic quality.

However we are seeing a huge growth in proper bakeries starting up, buying a few hundred kilos or a couple of tonnes a month, baking really good bread, properly, like it used to be.

We have a bakery that makes bread for one large supermarket, and they only make speciality breads: sourdoughs and they take two to three days to make each loaf.

Two years ago we were making six thousand a week now we are doing twenty-six thousand a week and that's purely

and simply because people are buying, even though it's not cheap.

They are recognising the fact that proper bread has its own flavour and is much better for you, and it lasts longer—and even when it's dry, you don't throw it away: you toast it or fry it.

Also sourdoughs help you better digest the gluten. The long fermentation process helps break down the gluten chains and makes them easily digestible, whereas modern sliced white breads don't have any of that, that's why you can squeeze them back into a dough ball.

In the UK, we have the cheapest bread in the civilised world because people think bread should be cheap. They don't understand that bread should actually be a bit more expensive than it is.

Raluca: What are your plans for the future?

Tom: WELL YOU GET to a stage when you think to get bigger you've got to mill more, and if you mill more, how do you do that?

Do you buy another mill? That's expensive because you've got two have two sets of millers and two sets of equipment, two sets of electricity bills. You can expand the capacity of your existing mill but you get



to a stage when you are physically constrained by the space. Or you can just become cleverer about who your customers are and what flours you give them so you can charge more for the same amount of time.

If you can make two thousand tonnes a week, it is far better to sell those two thousand tonnes a week to the consumer as one kilogram bags off the internet than it is to sell it in twenty-five tonne tanker loads for which you get half the price. So what you end up trying to do is make the exact same amount of flour but sell it through a different channel so that you increase your profit margin without actually having to get any bigger.

If we could mill one tonne of chestnut flour a week... Well that would be fantastic! We would be massively well off. But we can't, even though that's what we are trying to do: to sell more varied flour, specialised mixes directly to the consumer, so we don't need to get larger.

Raluca: Is your online business going well?

Tom: YES, IT IS really successful. That reflects the fact that people are looking for proper flour and increasingly understand that a good end product starts with very good ingredients.



The website has allowed us to get national and international without doing an awful lot. There are also more books and TV chefs today, and the day a TV chef says: "Oh you should use this sort of flour for this bread", the next day we get a nice spike in sales for that type of flour.

So generally, more and more people start realising they've got to have croissant flour to make croissants, pasta flour to make pasta, pizza flour to make pizza, baguette flour to make baguettes and so on. They go to their local shop and their local shop says: "we haven't got that, but you can try online" and we benefit.

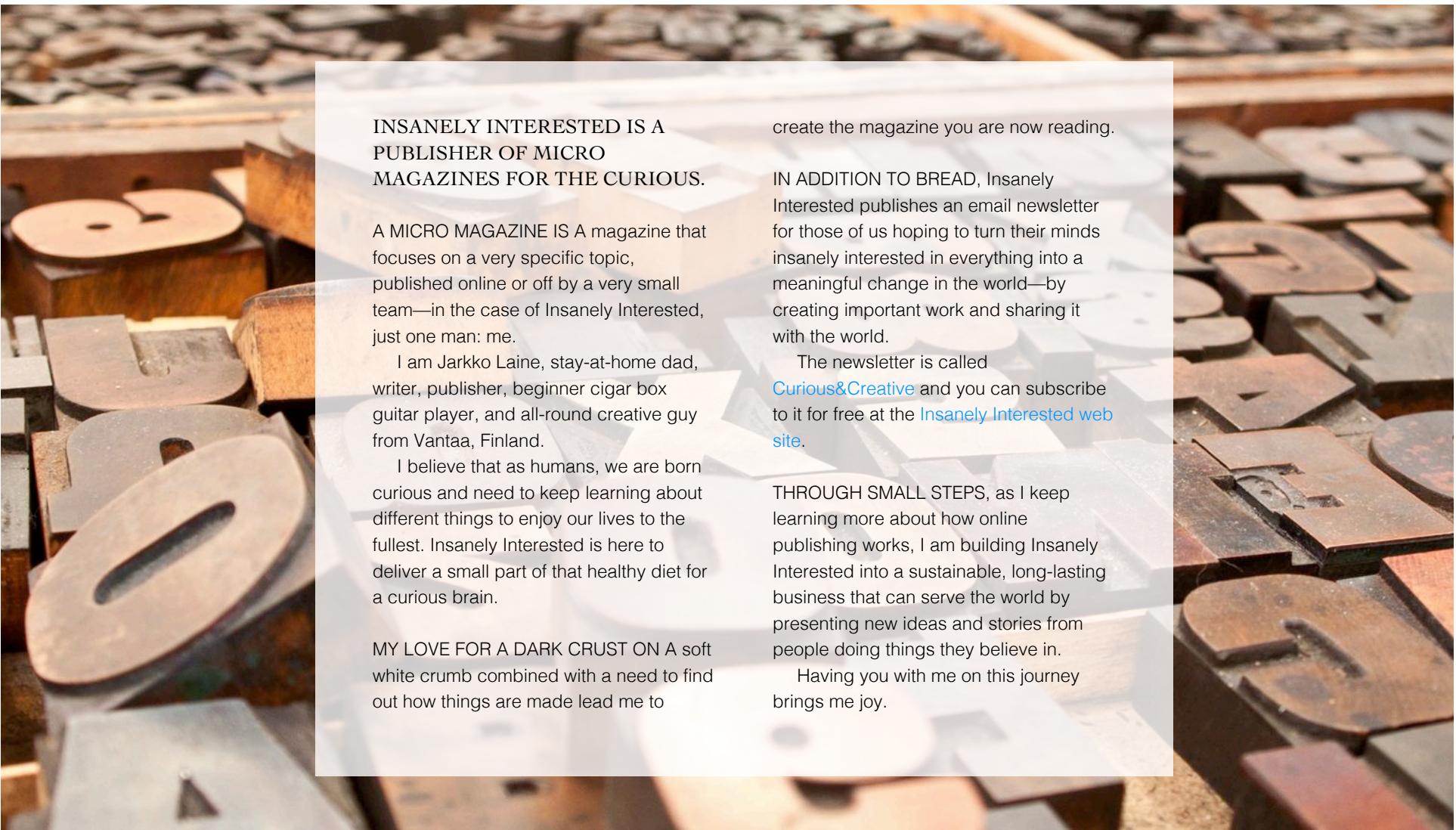


TOM TELLS ME that "with the artisan craft bakery you are on that border between science and art" and Shipton Mill is trying to deliver the best flours to allow each of

their bakers to produce their perfect loaf.

I've met incredible people in the past few months and I am glad they exist. I am glad they fight to keep old traditions alive or to help bring some of them back, because I hope their passion will inspire more and more people, and that my daughter Fiona will have the chance to see, taste and use the products of their work and learn to appreciate all of it.





INSANELY INTERESTED IS A PUBLISHER OF MICRO MAGAZINES FOR THE CURIOUS.

A MICRO MAGAZINE IS A magazine that focuses on a very specific topic, published online or off by a very small team—in the case of Insanely Interested, just one man: me.

I am Jarkko Laine, stay-at-home dad, writer, publisher, beginner cigar box guitar player, and all-round creative guy from Vantaa, Finland.

I believe that as humans, we are born curious and need to keep learning about different things to enjoy our lives to the fullest. Insanely Interested is here to deliver a small part of that healthy diet for a curious brain.

MY LOVE FOR A DARK CRUST ON A soft white crumb combined with a need to find out how things are made lead me to

create the magazine you are now reading.

IN ADDITION TO BREAD, Insanely Interested publishes an email newsletter for those of us hoping to turn their minds insanely interested in everything into a meaningful change in the world—by creating important work and sharing it with the world.

The newsletter is called [Curious&Creative](#) and you can subscribe to it for free at the [Insanely Interested web site](#).

THROUGH SMALL STEPS, as I keep learning more about how online publishing works, I am building Insanely Interested into a sustainable, long-lasting business that can serve the world by presenting new ideas and stories from people doing things they believe in.

Having you with me on this journey brings me joy.





THE BAKER AND HIS MILL

AS WE HAVE SEEN on the previous pages, there are still some amazing mills around the world and despite the low quality of the bulk flour sold in most supermarkets, great flour can be found.

But if you don't have a good artisan mill nearby—or want to get your flour really freshly milled, with complete control over it—whether you are a home baker or a small bakery, your only option is to mill the flour yourself. But is it a viable option for a business and what needs to be taken into account when doing so?

JOSEY BAKER has been baking enthusiastically for three years and documenting his journey on his blog all the way from [the first loaves he sold](#) in August 2010 when, in his first blog post, he wrote: "holy moly it's happening. i'm selling bread. and people like it. this is so totally rad it's making my eyes pop out of my face. not really, but i'm pumped up."

Last February, together with a local coffee roaster, Four Barrel Coffee, [he opened The Mill](#), a bakery and café built around fresh bread.

And as of October 8th, he is baking all of his bread with freshly ground flour (when I interviewed Josey, he was still in the middle of the transition, grinding roughly half of the flour himself). So, I figured this is the right person to talk to when it comes to bringing the mill into the bakery—and going from first loaf to opening a bakery, really fast.

* *

Jarkko: Let's start with a bit of background: How did you get started with bread and opening the bakery? How about milling your own flour?

Josey: I STARTED BAKING at home just over three years ago, after a buddy who was passing through San Francisco gifted me a magical little hunk of sourdough starter and scribbled some instructions. I baked my first loaf a few days later and was totally in love, and haven't really stopped baking since.

I was baking too much bread to eat, too much to store in my freezer, too much to give away, so I started selling it. Within a couple months I couldn't bake enough in my home oven so I started looking for a place with a bigger oven to do my thing.

I BAKED IN a local pie bakery for a year and a half, and spent many a very early morning cooling off a wood fired oven in an Italian Restaurant in Oakland.

But about three years after I baked my first loaf, I opened up [The Mill](#), a collaborative café-bakery with San Francisco coffee roasters Four Barrel Coffee. The mill (the piece of equipment) entered the picture about a year into the build out of the bakery, and it was largely inspired by Dave Miller, the fresh milled bread guru whom I've been fortunate enough to spend a bunch of time with.

Jarkko: You just started milling rye this summer. How has the process from the idea to implementation been like so far?

Josey: MILLING THE RYE has mostly been very smooth to introduce to our baking.

I remember the first big bake we did with the fresh milled rye, and long story short, it was a disaster. We hadn't done enough testing, and the dough fermented and baked differently enough that most of the loaves turned out to be inedible bricks of burnt and raw dough.

But the next day we went at it again, and ironed out all the kinks. And now, we are having trouble keeping up with the demand.



And as chance would have it, today [September 11, 2013] we are taking on milling half of whole wheat, and by next week we will be milling all of our whole grains! Very exciting for me, and I think our customers are going to really appreciate the difference.

Jarkko: What motivates you to grind the flour for the bakery yourself?

Josey: BY MILLING the flour ourselves right in the bakery, we are able to ensure the flour is as fresh as can be and has been milled exactly to our specifications.

I was very happy with our bread before we started milling the flour ourself, but I just didn't know how good it could get.

And now, there's no going back.

While there isn't much scientific evidence about this stuff, many people think that using freshly stone ground whole grain flour is much better for you as well. I've done many informal experiments with customers and friends who have issrues with gluten/bread/wheat, and they all say the same thing about the bread we make with fresh milled whole grain flour: it doesn't bother them at all.

Also, by milling the flour ourselves we are able to have relationships directly with farms in the area, which is rad.



Jarkko: How have your customers responded to the new bread?

Josey: WE HAVEN'T BEEN able to keep up with how quickly they're eating it!

Jarkko: How does milling the wholegrain flour affect your baking routine?

Josey: NOW THAT WE ARE milling our whole wheat, we are milling every day. We start milling in the morning, and go as long as we need, milling all of the flour for the following day. So all of the flour we mill gets used within 24 hours.

It would be great to be able to mill a whole week's worth of flour at once, but there's no way we could do that given how slowly we mill, which is about 30 lbs (13.6 kg) of flour per hour.

Jarkko: Moving to milling all your whole-grain flour, do you expect more changes?

Josey: YUP. This is why we've integrated it slowly: first just with the rye, now with our whole white wheat, and finally with our whole red wheat. We are also milling our own corn meal, cracking ancient grains for an awesome "biscone" we just started making (a sourdough scone-like pastry).

Soon enough we'll be selling our flour to folks, as well as making stone ground pancake blends, etc...

Jarkko: Where do you get the grain for the flour? How important is it for you to have a direct connection to farmers?

Josey: WE ARE ABOUT TO start getting our wheat from a great little farm just about 100 miles south of San Francisco, [Kenter Canyon Farms](#), and this is very exciting. I'd like to be as closely connected to the grain as possible, so sourcing direct from a farmer just a couple hours from the bakery makes me feel pretty good.

We've been working with Central Milling up in Petaluma for a few years, and they are a wonderful company with really high quality grains, but I'm after a more direct connection.

FOLKS HAVE ASKED me a bunch if I plan on growing the grains myself. Not any time soon! I've got my hands full as it is, but never say never!

Jarkko: Do you think customers care about the traceability of flour back to the field where it is grown?

Josey: IT'S FUNNY: People have cared

about this with their produce and meat for years, but for whatever reason grains are a little behind in this regard. I think it's likely because by and large bread is produced on an industrial scale, and people just don't even consider where the bread is made, let alone where the grains are grown.

Jarkko: What has been the most rewarding moment in milling your own flour for bread so far?

Josey: WE GOT SOME SAMPLES of wheat from Kenter Canyon Farm and we baked a few test loaves and were just blown away by the quality of the bread.

We'd been struggling to bake bread we were happy with for weeks, but I think a combination of breaking in the mill and being very sensitive to the dough as we mixed it led to a revelatory loaf.

Can't wait to share it with everyone.

Jarkko: What about the most difficult thing?

Josey: THE FIRST FEW WEEKS of baking with our fresh milled flour were pretty discouraging. The bread was just not very good!

"Folks have asked me a bunch if I plan on growing the grains myself. Not any time soon! I've got my hands full as it is, but never say never!"

Turned out that we needed to learn how to mill (duh), and how to bake with the flour, which required a different treatment than we were used to. But we got it under control now, thank god.

Jarkko: Do you have recommendations for a small bakery thinking of following at your footsteps? Did you get some good tips yourself when you first got started?

Josey: DO IT! There's such a growing demand for neighborhood bakeries, and I am really excited to see what things look like here 5, 10, 20 years from now.

As for advice, become obsessed with one type of bread and just keep tweaking it until it is the absolute best you've ever had, and then tell everybody you can about it!

Do it all yourself for as long as you can, and then find other people who are just as in love with it as you are. Then let the party begin.

Jarkko: Who has helped you the most in making the milling a part of the bakery so far?

Josey: DAVE MILLER is the inspiration behind having a mill in my bakery, and it was such a pleasure to have him visit the other

week, and spend the morning baking with me, milling up flour.

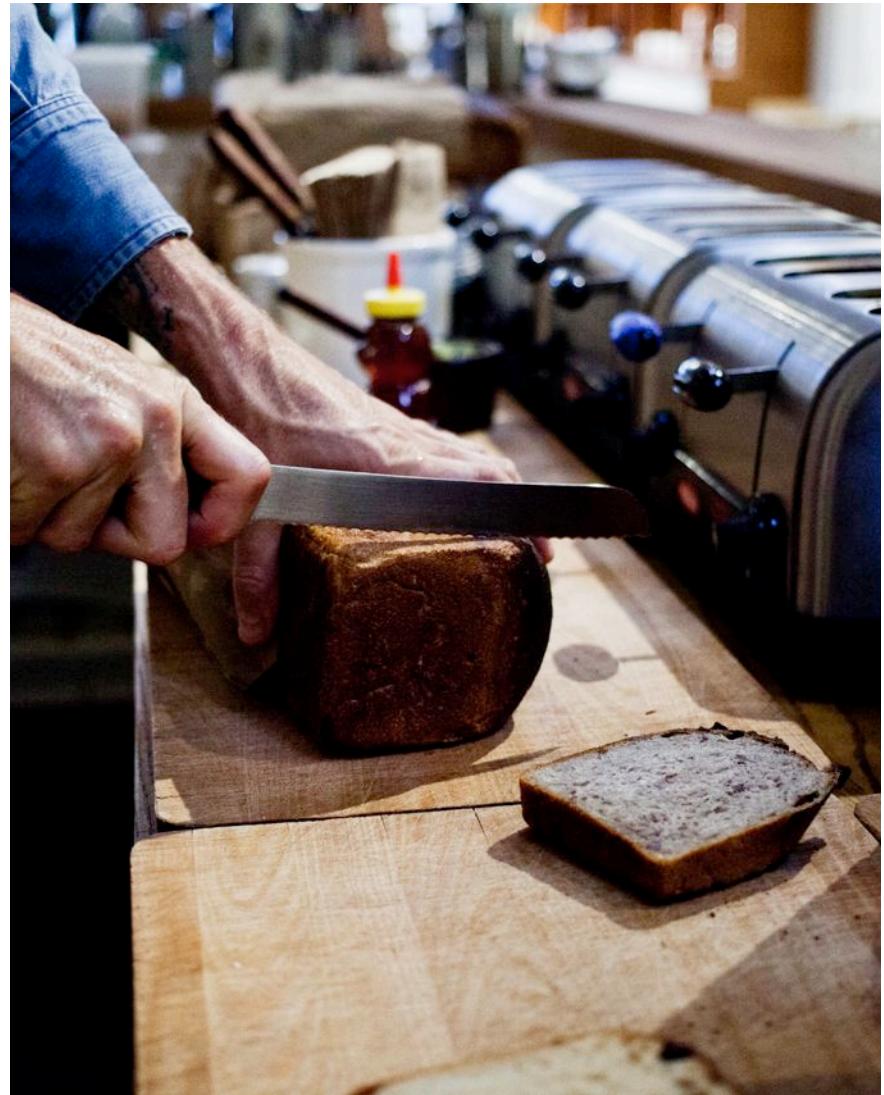
It was kind of surreal for me. I spent weeks traveling to and from his bakery, to glean as much knowledge as I could, and just to get to hang with him.

NICKY GIUSTRO from [Central Milling](#) has been an amazing support as well, spending hours on the phone imparting his wisdom, and always being flexible with the flour and grains he supplies us with at The Mill.



AT THE END of the interview, I asked Josey if he had anything more to add.

He sent me [this picture](#), with the note: "See attached. ;)" To me, it seems like the perfect summary of the baker/miller's approach to life: just take your clothes off and jump into the river.







HONEST, GLUTEN FREE BREAD

REAL, GOOD, AND HONEST are not words that you would usually associate with gluten free bread.

Factory breads filled with additives and made with long lists of ingredients most wouldn't know have anything to do with bread are the standard. Instead of natural fermentation, chemistry and E codes (such as E461 and E415, methylcellulose and xanthan gum respectively) are used.

In fact, because of this bad reputation, I wouldn't be surprised if you were ready to skip past this article and have nothing to do with gluten-free baking.

But don't do that just yet. There is another way.



WHEN CHRIS STAFFERTON and one of his daughters had to leave gluten behind, Stafferton wasn't ready to give up on good, fresh bread—something he had enjoyed since a young age. The frozen breads and flour mixes from the supermarket didn't feel right, so he decided it was time for him to start baking the bread himself.

"That was years ago," Stafferton remembers, and says "We live in a regional area of Tasmania, so options for ingredients are quite limited. I set out with two rules: First, I use only readily available ingredients, preferably natural, and second, I eat everything I make, successes and even the most dismal failure. There is always something to learn."



Stafferton keeps trying new things and documenting his gluten free baking experiments [on his web site](#) where he also sells his gluten free bread recipes while working on a book on gluten free baking.

"Of course every time I think I am about ready, I find a new area to explore and develop." Stafferton says about writing his book.

FOR SADIE SCHEFFER, the journey into gluten free bread making started with what could be a scene from a romantic comedy: "I had moved to San Francisco to follow a boy that I had a crush on in college."

The boy was gluten intolerant. And Scheffer knew exactly what to do: Without prior knowledge about gluten-free baking, she started, as she says herself: "baking stuff with gluten free flours to have something to entice him to hang out with me."

And after about a year of gluten free baking, the two started dating, Scheffer realized she too was gluten intolerant, and learned about sourdough fermentation.

"I was kind of bummed that I missed my chance to make wheat sourdough, so I figured I'd try it with gluten-free flours."

"I made a starter out of a whole bunch of different things. It worked for a while and then it died. Then I made a second

one and it died. The third one kind of kept working." Scheffer says.

AT ABOUT THE same time, Scheffer read about another baker in San Francisco, Josey Baker (same Josey Baker who you met on page 33—it's a small world!) who was selling bread from his home.

"I got pretty jealous and I wanted to do that as well. So I e-mailed however many people I knew in San Francisco—about thirty people—and said: I'm baking bread out of my house, come buy it!"

And today, two years later, her bakery, [Bread SRSLY](#), is doing well, growing fast and gaining a strong following thanks to its dedication to natural ingredients and good bread.

AS THESE EXPERIENCES from Scheffer and Stafferton show, making gluten free bread using a craft approach is possible.

So, if you have someone in your family who cannot eat gluten based bread, why not play a bit with gluten-free baking and give him or her a chance to enjoy some healthy and additive-free homemade bread for a change?



AS WE ARE ABOUT to begin our journey into gluten free bread, there are two things we need to agree on.

FIRST, the goal shouldn't be to make a bread identical to your favorite wheat based loaf. We can emulate one, and we can achieve a rather good bread, but as Andrew Whitley writes in *Bread Matters* (one of the very few serious bread baking books that have a section on gluten free bread), it will never be quite the same:

"Making bread without gluten can be done, but it will not be the same as ordinary bread. [...] How could it be, when it lacks the very thing that defines bread?"

SECOND, when making gluten-free bread, we need to unlearn, or push aside a lot of what we already know about making bread—what works for wheat will not work for gluten free flours—and take this new way of making bread as an adventure.

We don't have to be quite as adventurous as Scheffer when she first started immersing herself into bread making and just experimented with no recipes to guide her, but a bit of this same attitude, coupled with some knowledge on fermentation can get us a long way:

"You have to be OK with rewriting the book, basically." Scheffer says.

BUT IT'S NOT only gluten based bakers who might need to unlearn a thing or two.

Experimenting with gluten free breads, Stafferton has found that a lot of the gluten-free baking knowledge isn't always necessarily the final word: "Most books that deal with gluten free bread follow a common pattern: They make bread with batter, and most use gum (usually xanthan or guar gum) to hold the batter and bread together."

"Many gluten free recipes seem either to aim for a sort of generic bread flavour, or to offer a sort of cake that can be sliced and toasted. It seems to be part of the gluten free heritage. In the early days of gluten free baking someone started with that type of recipe: batter made with 101 ingredients stuck together with gum, and it became a sort of default standard for gluten free bread."



JUST LIKE REGULAR bread, gluten free bread begins with flour. Some of the flours might be familiar to you as you may have added them to your bread dough for flavor or other properties, others maybe not. The difference is that now, we are using them on their own, without the help of the gluten coming from wheat.

"When making gluten-free bread, we need to unlearn, or push aside a lot of what we already know about making bread—what works for wheat will not work for gluten free flours—and take this new way of making bread as an adventure."

The number of different plants used in gluten free bread is a huge—Whitley lists twelve of them and I'm not sure that's all—so I asked both Scheffer and Stafferton to share their favorite flours, hoping to find a few good ones to start from.

SCHEFFER has a clear favorite: sorghum, which is one of her top four, the flours she uses in one of her recipes: "The four together are white rice, millet, sorghum, and arrowroot."—a combination of flours that she says work very well together.

Stafferton finds it hard to mention just one favorite, saying "I use different flours for different bread styles", but he seems to lean toward buckwheat, millet, and rice.

"I have made some wonderful pumpernickel style bread using buckwheat. Buckwheat also works really well as a base for spiced fruit breads. My current favourite bread is a buckwheat bread with black-strap molasses." he says, and continues:

"Millet is also a brilliant flour with an excellent flavour. My favourite millet breads are a focaccia style bread and a seeded bread with sunflower and flax seeds. Rice flour can be very versatile. I use it in baguettes, sandwich bread, and my Emperor's Batard: a sourdough made with black rice flour. It has an exquisite flavour with a smokiness reminiscent of

Lapsang Souchong tea."

SO FAR so good: flour is a natural ingredient. But what else do we need to add into the dough? A flatbread such as the Ethiopian injera bread can be made with nothing but gluten-free teff flour and a sourdough ferment as it doesn't have to hold its shape. But what about other types of breads?

Stafferton says: "Beyond flour, leaven, salt, and water, every ingredient must be justified. Why is it there? What benefit is it providing?"

Yes, we want to keep the number of additional ingredients to a minimum while still making reasonable bread. But what is the minimum?

THE SHAPE OF a loaf of bread is kept together by the strength of the gluten network. In a gluten-free dough, you don't have that, so you need to use some other ingredient to achieve the same effect.

For a long time, xanthan gum has been the default choice among gluten-free bakers. It's a common additive in all kinds of foods from salad dressings to ice creams—wherever where additional viscosity is needed.

In her book, *Gluten-free & Vegan Bread*, Jennifer Katzinger writes: "Most



commercial xanthan gum is a byproduct of bacteria that feed on corn, with some derived from bacteria feeding on wheat." Whether xanthan gum is something to worry about or not is open and debatable, but I think Katzinger is onto something when she writes: "perhaps the problem is in having too heavy a dose of xanthan gum in our foods."

STAFFERTON STILL HAS one recipe he hasn't been able to make without xanthan gum: his gluten-free croissants. But they are a special treat, and just like Katzinger, he doesn't see a problem in having a little dose of xanthan gum on special occasions. In general, he says: "Wherever possible I avoid them. If your digestive tract has been damaged, I can't see any sense in a diet rich in gums."

Scheffer uses xanthan gum in some of her breads, but has been moving towards psyllium husk, a plant based ingredient made from the seeds of a plant called *Plantago ovata*.

"I like psyllium husk a lot better", she says, "because xanthan gum is one of those ingredients no one really talks about. It's super amazing and helpful in baking, but at the same time I'd rather not be dependent on it. Psyllium husk, you know, I feel a lot better about it: it comes

"Most commercial xanthan gum is a byproduct of bacteria that feed on corn, with some derived from bacteria feeding on wheat."

from a plant, it's kind of more tolerable, in my mind."

MAYBE THIS IS a good approach to additives. Use the most natural one that gives you the results you are after. And in many cases, it can even be so that the natural ingredients make for a better bread.

Like in this example from Stafferton:

"A few years ago, I worked with some high school students, teaching them to bake good gluten free bread. We started with a basic bread that used xanthan gum. It had all the qualities of the typical earlier gluten free bread. It looked good, but crumbled easily. I then worked through a range of recipes. At each stage the students took their bread around the school and had other students and staff taste it, and score the bread for appearance, taste and texture."

"Half way through we made a range bread with and without xanthan gum. Only my baking students knew the recipes. The gum free bread won on all measures. There is really no need for industrial additives like xanthan. There is no need for other gums either. Good gluten free bread can be made with natural ingredients."



AMONG THE ingredients popular in gluten-free baking are different starches such as tapioca, potato, and garbanzo bean (chickpea). For some types of (fluffier, white) breads, they can be useful—unless you are intolerant to them as well, as Scheffer found out after a while of using tapioca flour in all of her recipes.

"Once I realized that's what was making me sick, that kind of drastically changed where the business was going. We turned more towards the more wholesome sourdough bread, got rid of the commercially yeasted breads, and started going for the most healthy bread we could make," she recalls.

"Since then, I have met a ton of people who also cannot eat one or more of those things."

Now, she uses arrowroot, which she says is a "much more digestible starch, but also a lot stronger", meaning that for the same results, in a recipe, you can use a lot less of it compared to the other starches.



WITH THE INGREDIENTS more or less covered, it's time to mix a dough. How much water do we need?

A lot, Scheffer says.

"The moisture content is really really high. I don't know the percentage of hydration but it is probably around two or three hundred percent," she says, laughing, "It's an extremely wet dough."

Along the same lines, Andrew Whitley writes: "Gluten-free flours need much more water than wheat ones. [...] Gluten-free doughs and cake mixes must be sloppy — really sloppy."

STAFFERTON DOESN'T quite agree. He is going after a more traditional bread shape and structure:

"The gluten free recipes and pre-mixes I tried in the early days used batter. The bread never had a 'bread' texture. It was more like a cake. With a batter you just can't achieve the texture that comes from even the most basic shaping of loaf. Using dough I have a little more control over how the loaf turns out. It is more like making regular bread."

Stafferton also likes to knead his bread dough a little (there is no need for long kneading workouts, and no matter how hard you knead, no gluten window appears).

He says: "But in regular bread making, you are doing more than simply developing the gluten! You develop the structure of the bread, you move the gas and mi-

"We turned more towards the more wholesome sourdough bread, got rid of the commercially yeasted breads, and started going for the most healthy bread we could make."

crobes and dough to enable unfermented dough to be fermented. There are techniques for 'no-knead' regular bread, so I guess gluten free bread has a similar range of techniques."

"You can make gluten free bread without kneading, and you can make it with kneading. I find I get better bread with a little kneading."

UNLIKE KATZINGER and some other gluten-free bakers who depend only on oven spring for the rise of the bread, both Stafferton and Scheffer use a longer fermentation process in their breads.

Both use a sourdough starter in some of their gluten-free baking. Scheffer says a sourdough starter—hers was made from sorghum flour, but teff or brown rice both work fine—is the key to great bread: "It ferments from anywhere between 15 to 20 hours. That adds that springiness to it and makes it last a really long time just because of all the lactic acid in there. That's like THE key to the bread, I'd say."

Stafferton also says fermentation is important: "Without gluten you still want some fermentation, even if you are only using instant yeast in a sandwich loaf. Allowing the dough to rest can also improve the hydration of ingredients. With fermented gluten free bread the resting

times are really determined by the need for fermentation to proceed. If there is no bench rest, there is no fermentation."



AS ALWAYS, the only way to really learn something is by trying it yourself. This time, to do that we have a recipe for a gluten free bread, designed by Chris Stafferton.

The bread is an artisan bread based on just one flour, buckwheat. It uses chia seeds and psyllium husk for structure and a poolish type pre-ferment, which Stafferton says is good for many reasons:

"Again, with gluten free bread, the same as with regular gluten bread, a poolish is part of the fermentation of the dough. It allows the use of a smaller amount of yeast or sourdough starter. Because flour is wetted and enzyme activity, converting starches, is initiated early in the process there is no need for sugar to be added. With some gluten free flour using a poolish also allows flour to be more completely hydrated—this is particularly useful with millet and sorghum flour, as well as other coarser flours."

THIS RECIPE is just a first step on an exciting journey into the unknown: the world of

gluten-free baking. Stafferton is constantly looking for new, distinctively gluten free breads:

"I enjoy experimenting with ingredients and techniques, so most of the bread I make is distinctive gluten free bread. The most recent, and it is still in its infancy, is a Honey Yeast bread. It uses a dough similar to my baguette recipe, but only uses fermented honey as a leaven. Before and after each loaf there is a lot of thinking, tasting, trying techniques and mulling over the results. The final recipe is simple, but getting there is quite a journey."

Scheffer recommends being open to a completely new way of making bread and taking a lot of notes. Gluten-free baking is an adventure, with still many things to learn and uncover:

"Write everything down, keep a log of what changes you are making at every experiment. The flours especially."



BUCKWHEAT (*Fagopyrum esculentum* Moench) is actually not a grass (despite the name, it has nothing to do with wheat) but a plant related to rhubarb, sorrel, and knotweed. The seeds, found in the withered flower, are naturally gluten free and therefore a good choice for a gluten free bread. The taste takes some getting used to, but after that initial effort might become a favorite.

The biggest producer of buckwheat in the world is Russia, also well known for its delicious buckwheat blinis. In Japan, buckwheat is used for producing soba noodles. And in the French Brittany, pancakes are made of the flour.

GLUTEN FREE BUCKWHEAT ARTISAN BREAD

a recipe by CHRIS STAFFERTON

THIS GLUTEN FREE bread recipe is based on just one flour, and as few additives as possible while still getting a good loaf as a result. It includes a poolish pre-ferment to give the bread some more character.

Once you get comfortable with this bread, one idea for the future would be to replace the poolish with a gluten free sourdough starter. But now, let's make some honest gluten free bread.



FIRST, PREPARE A POOLISH at 100% hydration:

150 G BUCKWHEAT FLOUR

150 G WATER

0.5 G (A PINCH) INSTANT YEAST

WEIGH 150 g of water, mix the yeast with the water and allow it to stand for a few minutes. Then mix 150 g of buckwheat flour into the water.

Cover the bowl or jug and allow the mixture to ferment for around eight hours.

THE TIME will depend on room temperature and how big a pinch of yeast is used. Warmer temperatures will reduce the time required. Cooler temperatures will increase the time required.

I work on about 8 hours (overnight) with a temperature of 18 °C to 20 °C (64 to 68 °F). Sometimes the yeast activity has begun to subside a little. That is not ideal, but it is OK. I have put the poolish in the refrigerator when I haven't been ready to make the dough. Refrigeration slows down the activity and gives me time!



WHEN THE POOLISH is ready, mix the final dough.

200 G BUCKWHEAT FLOUR

15 G CHIA SEEDS

15 G PSYLLIUM HUSK

4 G SALT

195 G WATER

ALL OF THE POOLISH

MILL CHIA seeds in a coffee grinder, then mix them with all the remaining dry ingredients gently with a whisk to ensure there are no lumps of milled seed.

If you don't have a coffee grinder, you can soak the seeds in some of the water.

NEXT, mix remaining water (195 g) with the poolish and dry ingredients. Mix well in the bowl. You should have a stiff, but kneadable dough.

Set it to rise for one hour in a warm place.

Knock dough down and knead for a few minutes. (You will need a little extra flour during kneading to dust the kneading board and dough¹.)



1: When I (Jarkko) first tested the recipe, I didn't need any additional flour as the dough was very stiff—in fact, even the 100% hydration poolish was more like a biga than a regular, batter-like poolish. That didn't prevent the dough from fermenting nicely, so don't worry if you get a rather stiff dough.

SHAPE THE DOUGH and place it on a baking sheet. Cover shaped dough and set it to rise for about 2 hours in a warm, draft free place.

Slash the top of the loaf before putting it in the oven (use the tip of a very sharp knife and slash across the loaf). This allows the loaf to expand with less tearing of the crust.

BAKE THE LOAF in a moderately hot oven (200°C, 392°F) for 30 to 35 minutes². If you are unsure of whether the loaf is ready, check its internal temperature: it should be cooked when the temperature is about 97°C (206°F).

Mist the loaf with filtered water and leave in the oven for another 3 to 5 minutes with the oven turned off.

2: I baked this bread (see photo on the right) using my cast iron pan / clay pot dutch oven combination covering the loaf for the first 20 minutes to create a closed, moist environment. I also heated the oven to my regular baking temperature of 230°C. This worked really well, and gave the bread a rather good oven spring.





BACK TO THE WOOD-FIRED OVEN

RICHARD MISCOVICH is an experienced baker and a popular teacher at the Kneading Conference where he has been leading workshops on wood-fired oven baking for a number of years as well as at his workplace at the Johnson & Wales University in Providence, Rhode Island.

His new book, which took four years to complete, [From the Wood-Fired Oven](#) was published on October 10th. I just received my copy from Amazon today, and at first glance, it looks a lot like the long-awaited "sequel" to Daniel Wing's classic, [The Bread Builders](#)—updated for a new time.

I asked Richard a few questions about baking in a wood-fired oven and getting started with one.



Jarkko: Can you tell a bit about your background? How did you get involved with wood-fired ovens and what was it about them that inspires you?

Richard: THE FIRST HEARTH BREAD I ever tasted was rye bread my Polish aunts and uncles carried north from the Polish enclave of Hamtramck, MI to 1970s era white bread mid-Michigan.

Later, in the mid-1990s, when there was a nascent but growing interest in good bread, I was fortunate to be in the right place at the right time. I read [Bread Alone](#) by Daniel Leader not long after it was published in 1993. This book revved up my interest in bread baking (I had been baking bread a few times a week in my home oven), but, more importantly, piqued my interest in wood-fired ovens.



I TOOK A TRIP to San Francisco to take classes at [San Francisco Baking Institute](#) and made an appointment to visit Alan Scott. I was inspired to build my oven, Magdalena as soon as I returned to North Carolina and to use it to bake European style hearth breads at my micro-bakery, One Acre Garden & Bakery. The [Bread Bakers Guild of America](#) was also newly formed and started creating a network of like-minded individuals and offering education to in order to shape the knowledge and skills of the artisan baking community.

Eventually, I wanted to gain more baking experience and left coastal North Carolina to work at the [King Arthur Flour Bakery](#) in Vermont.

For the past eleven years I have been teaching bread baking classes at [Johnson & Wales University](#) in Providence, Rhode Island. My academic schedule allows me time to bake in my brick oven and participate in wood-fired oven gatherings like The Kneading Conferences¹.

"I love the self-sufficiency that comes from having a wood-fired oven in my life. It makes me feel secure, because I have the ability to provide necessities: food, warmth, sanitation and community."

I LOVE the self-sufficiency that comes from having a wood-fired oven in my life. It makes me feel secure, because I have the ability to provide necessities: food, warmth, sanitation and community.

I am also awed by the power of fire and the opportunity to observe it while it is momentarily contained within a box of bricks.

Jarkko: You are a big proponent for wood-fired ovens. Is this because of the quality of the bread baked in such an oven or are there other reasons why you think it's important to keep the tradition of wood-fired ovens alive?

Richard: I DO THINK there are special attributes to bread baked in a wood-fired oven. That is why there is a French appellation for loaves baked on the same hearth where the wood is burned—*pain cuit au feu du bois*.

This is not to say bread baked with retained heat generated by a wood fire is better than bread baked in an electric or gas oven. But wood-fired hearth breads are unique and a lot of that has to do with the process required to bake it. In addition to nurturing fermentation, baking bread in a wood-fired oven requires careful monitoring so an ideal baking environ-

¹: See the June 2013 issue of Bread for an article on the Kneading Conference.



ment—say, 450° F (232° C) and steamy—is achieved.

It is satisfying to bring both of these requirements together in order to unload beautiful loaves from the oven. This process is known to the ages and I find it satisfying to engage in a centuries old routine.

I ALSO ENJOY cooking in wood-fired ovens and often hear people say food prepared in that dynamic environment simply tastes better than the same food prepared in a gas or electric oven.

I agree.

I recently cooked a wood-fired duck breast dinner for 60 food writers and industry professionals. The plan was to simply sear dry-aged duck breast on cast iron in the presence of fire; I had been cooking it that way every couple of days for the past month. Two professional chefs assisted me and during the prep time asked if there was a sauce for the duck. Cranberry compote? Maple syrup glaze? The full-figured flavor of high quality duck breast cooked with wood-fired heat had satisfied me enough that a sauce never occurred to me. Smoke and fire are the sauce.

FINALLY, wood-fired ovens bring people together because everybody is drawn to

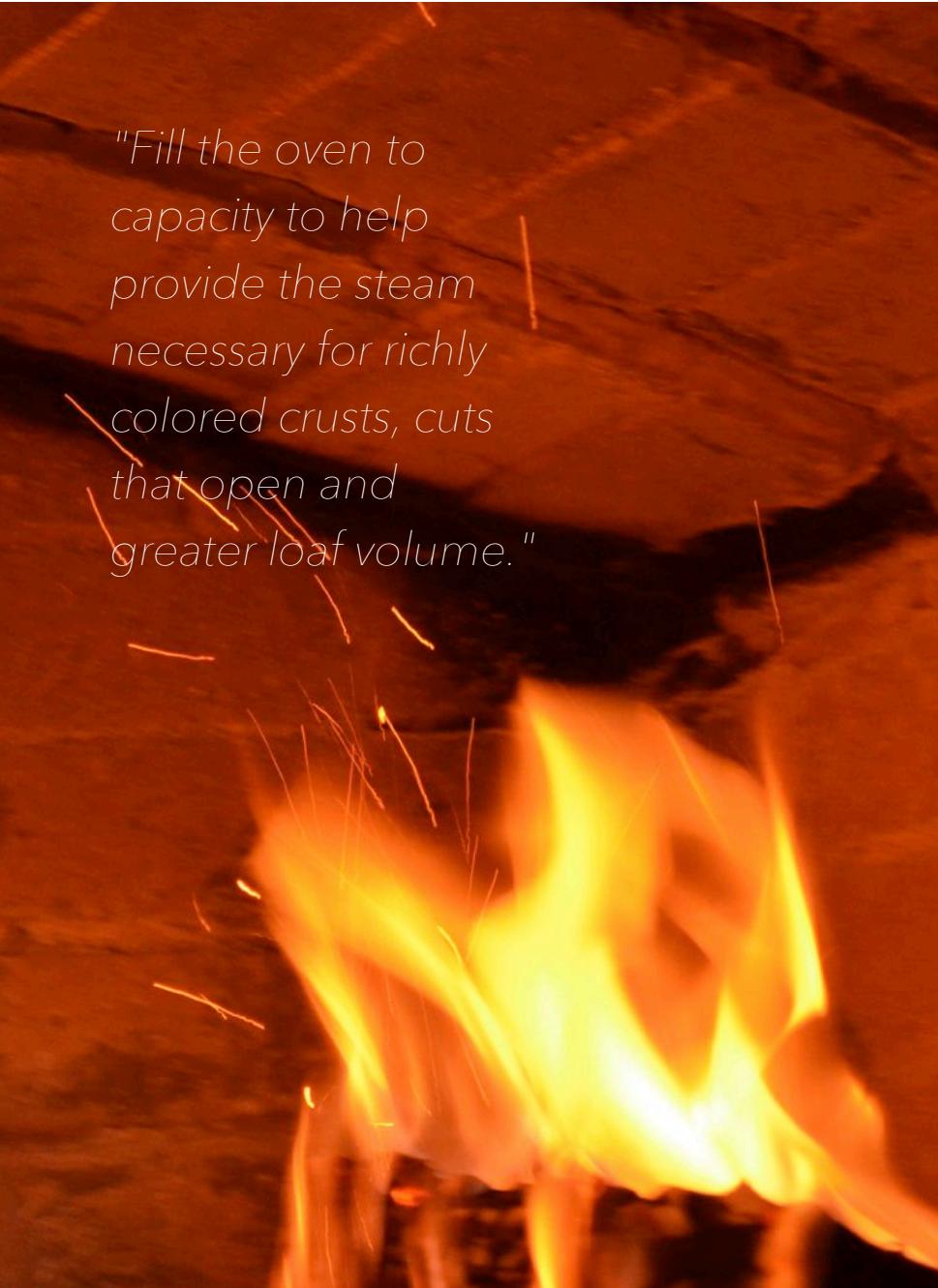
fire, pizza and good bread. I think it is good for our cultures to meet people in our communities and share a rustic meal.

Jarkko: Your brand new book, *From the Wood-Fired Oven*, talks about utilizing the heat from the oven as much as possible. What inspired you to write this book? Is there a specific message you want to pass to your readers?

Richard: INTEREST IN WOOD-FIRED ovens has increased dramatically over the past twenty years, bringing European hearth breads and pizza into the purview of emerging food movements (and backyards) around the world.

As we began to incorporate wood-fired ovens in our cultures, I realized there was a need for a book that described how wood-fired ovens work and how to use them to their fullest potential for cooking and baking.

Live fire roasting. Bread and baking beyond bread. Using the oven as a smoker. Sprouted Wheat Power Bars. Rendering fats and drying herbs. I also wanted people to understand the science behind bread baking and how to achieve the best results, whether the oven is wood-fired or not.



"Fill the oven to capacity to help provide the steam necessary for richly colored crusts, cuts that open and greater loaf volume."

OVEN DESIGN has also evolved over the years and more energy efficient building materials became available. The [Masonry Heaters Association of America](#) infused the wood-fired oven scene with trained masons and combustion experts. It seemed like a good time to write a book that described all these advances while reminding people about traditional foods and helping them remember how to cook with fire.

There are three major messages in this book: "Burn cleanly", "Control Fermentation" and "You have the heat; why not use it?"

Jarkko: Thinking about people who have a wood-fired oven in their homes, but never use them for baking bread, how would you suggest getting started? What are the most important things to keep in mind to avoid the first try being also the last?

Richard: CONTROL FERMENTATION so the dough you bake in a wood-fired oven is high quality and at its peak of ripeness. Oven based variables, such as firing schedule, loading temperature and steaming methods, can then be adjusted and dialed-in for optimum results in the final loaf.

Also, fill the oven to capacity to help provide the steam necessary for richly colored crusts, cuts that open and greater loaf volume. If that amount of bread isn't feasible because your oven is much larger than the amount of dough you regularly mix, bake loaves in covered cookware like cast iron or even under an inverted bowl.

Practice makes better and even a less than optimum bake will teach you something about the oven—as well as provide some handmade bread. Flatbreads like focaccia and pita are good breads to start with.

Jarkko: How about bakers who dream of having a wood-fired oven of their own? What would be the first and second steps towards achieving that dream?

Richard: DO SOME RESEARCH on the types of ovens based on firing method, shape and building material and decide the best option based on your needs. Your needs will be very different if you want a residential backyard oven or are looking to build the heart of a community micro-bakery.

A backyard earth oven can be easily and economically built over a weekend. Residential or commercial brick ovens will require more planning and expense.



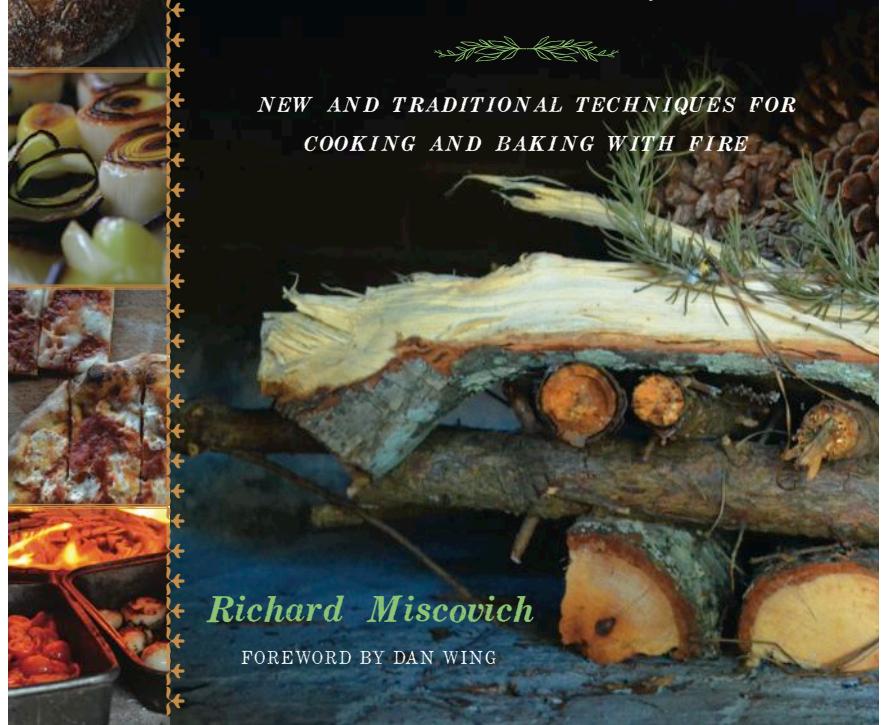
With recipes for artisanal hearth breads,
pizza, and pastry, plus methods for roasting, braising,
dehydrating, infusing, and more . . .

From the
**WOOD-FIRED
OVEN**

*NEW AND TRADITIONAL TECHNIQUES FOR
COOKING AND BAKING WITH FIRE*

Richard Miscovich

FOREWORD BY DAN WING



Plenty of people without any masonry experience build beautiful ovens—it is fun if you like to do that type of work. Or contact organizations like the Masonry Heaters Association of America who can direct you to an oven builder in your area.

DETERMINE THE SIZE of the oven you think will suit your needs. Make sure the size is large enough to accommodate your favorite cookware.

Then increase the size a bit, even if just a few inches. I never met anybody who said they wished they had a smaller oven.

Jarkko: *For readers living in the city, would you have any ideas on how they can get to use a wood-fired oven?*

Richard: I THINK THAT even the smallest city yard has enough room for a wood-fired oven, but know that some people don't have any yard at all. I have a small wood-fired earth oven in my backyard in Providence, Rhode Island.

If local codes preclude you from having a wood-fired oven, look around for a community oven that may exist in a park or other common area. In the United States, David Cargo maintains a list of community ovens, categorized by country and city, at his website, [Quest for Ovens](#).

Civic groups and passionate individuals around the world are exploring building ovens in community areas and using them as gathering places to cook and bake.

Jarkko: *What would you like to see in the future of WFOs and bread in the next ten years or so, in the United States and across the world?*

Richard: I APPRECIATE the vision Craig Ponsford put forth when he was the Chairman of The Bread Bakers Guild of America, of having good bread available in every community, no matter how small. I think wood-fired ovens are the key to providing this. And I'm excited about the local grain growing and milling economies that are bringing together the farm and fermentation.

I'm also interested in helping spread the word about efficient combustion and to encourage Urban Wood Fuel Projects that remind people to burn the copious amounts of wood that simply fall to the ground around us at all times. Last winter, Blizzard Nemo brought down city-dwelling branches throughout New England. Part of my outdoor chores—in addition to plenty of shoveling—was to gather broken branches from the gingko park across the street. Some of the branches

"I'm also interested in helping spread the word about efficient combustion and to encourage Urban Wood Fuel Projects that remind people to burn the copious amounts of wood that simply fall to the ground around us at all times."

were ready to burn as they had died and dried long before being pruned by the weight of heavy snow. Other branches were wrenched green from trees and needed to be seasoned until they can be burned for maximum efficiency. Either way, I was able to gather some local fuel—maybe enough for one bake.

In addition to harvesting fuel, cleaning green spaces helps municipalities focus labor hours and petroleum use on tasks more important than picking up sticks in parks. Once you get in the practice of looking for fuel wood, you'll start seeing it everywhere!

Jarkko: Is there something more you want to add?

Richard: IN REGARD TO bread baking: Control fermentation by balancing time and temperature. Strive to increase hydration. Incorporate an autolyse when appropriate. Feel positive when you are mixing.

Enjoy the ride.

IN REGARD TO wood-fire ovens: Use the appropriate amount of thermal mass for the intended use of the oven. Burn cleanly. Use the highest quality insulation you can afford. Respect the fire.

Enjoy the ride.





*"Feel positive when you are mixing.
Respect the fire.
Enjoy the ride."*





THE BREAD PEEL

by JESSE MERRILL

WE USE A FEW tools in this trade.

A spiral machine, a few bench scrapers and plastic bins, a razor knife and two peels—those oversized paddles with which a traditional baker loads and unloads the oven—there is not much more to see. But, for an interested observer, any tool that shows the wear of long, honest service in a craftsman's hands can capture the imagination. I admire how these tools tell stories of a craftsman's days; how their movements together can be seen and even felt in one's own hands.

A well-used tool can become a trusted companion of a skilled worker, and at times the right one becomes an extension of the body, seeming to move straight from the craftsman's will in a subtle choreography.

"The tool I do love to use, the one I look forward to working with each baking day, is my unloading peel. Elegant in its simplicity, this is a finely crafted tool, shaped and carved from a single white ash plank."

PERHAPS THE MOST EVOCATIVE image of an artisan baker's work—other than the massive brick oven itself—is the bread peel.

I have made and used many peels, tried many shapes and materials. For loading the risen loaves onto the oven's hearth, I've settled on a simple one of birch ply with a red cedar handle. Loading four loaves at a time, it's fairly light and as agile as can be expected. It does its job well enough and rarely talks back. But there's not much thrill to using it and it never feels like a more-than-adequate dancing partner. Someday it may even be replaced by a canvas belt loader.

THE TOOL I do love to use, the one I look forward to working with each baking day, is my unloading peel.

Elegant in its simplicity, this is a finely crafted tool, shaped and carved from a single white ash plank. Its curves are pleasing, its balance precise, its forward edge sharpened by wearing on the oven's brick floor. The blade is wide and long enough to hold four or five finished loaves at a time. The shoulders curve gently down to the long handle, allowing it to slide smoothly out through the oven's narrow doorway in a single motion. The end of its long-shafted handle is finished with a

carved finial knob that has worn to a pleasing lustre through long days in the baker's hand.

There can be no finish so honest and easy on the hands as that left by edge tools—the planes, spokeshave and carving knife that shaped, rounded and smoothed this old board to its new purpose—you can see the unsanded marks of these tools beneath the wear of hands and hard bricks.

WITH A CREAKING twist and a yank the iron doors fly open, drawing behind them a scorching head of steam. Waiting a brief moment and watching for the sweet smelling cloud to rise into the open sky, I thrust the peel in, twist it up on edge and madly shove aside the pale loaves near the oven's mouth.

Far against the unseeable back wall, the first loaves in will be a dark nut brown and must be the first loaves to come back out. I search out the darkest loaves from behind the rows of bread, working with just one hand. A flick on the peel's finial sends two under-dones scurrying aside and then drives deftly under three others. A single fluid movement brings them hurtling into the sunlight, spinning off to my left and gently lands them upright in a basket.

Loaves so fresh are glassy fragile; their crust will easily shatter in sharp shards that may splinter and cut the unwary.

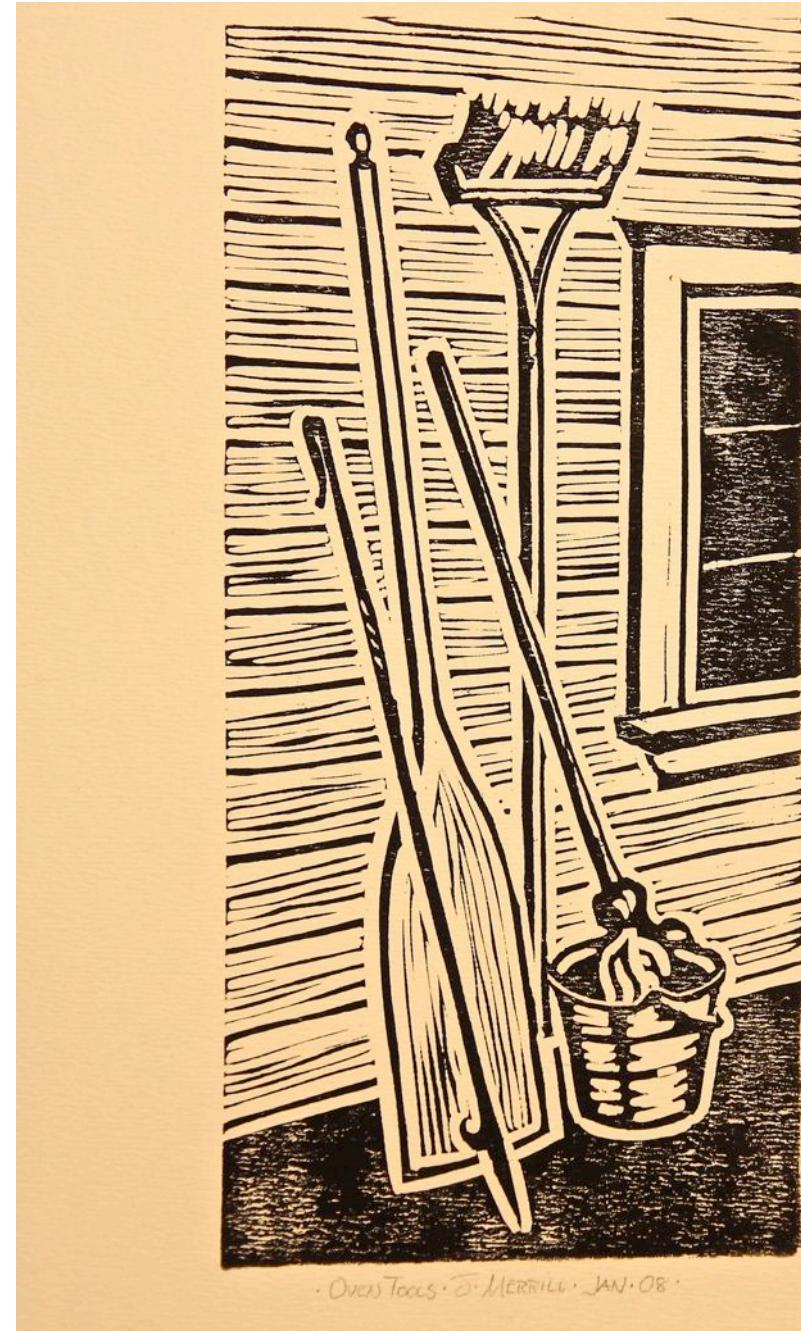
Back in again, I hunt out the loaves close to the side walls and spin them gently around, giving the paler side a few minutes next to the heat-soaked brick to even their colour. Then back to shoot the still-soft front loaves straight down the aisle I've created where they'll finish in the deep, even heat by the oven's back wall.

WHEN I WAS building my first brick oven, I called my father and asked him to keep his eye out for a likely board to make a bread peel.

Days later he arrived with a plank of ash wood I recognized at first sight. It took me back through the decades to the day-dreamy kid who would spend many afternoons sorting and re-sorting the collection of cherry, ash, oak, maple, butternut, mahogany and other wonders squirrelled away in the loft of my father's barn. My father taught me young to have a deep respect for tools and materials and he used neither frivolously.

A fine plank would be brought down to the workshop, the piece needed for a boat rib, guitar neck, or dogsled frame would be traced on it every way it might fit. And, as often as not, the board would

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go right back up—uncut—waiting for just the right purpose.

This plank in my hands was an unexpected gift. Live edged, with the bark still clinging to it, straight and clear; it wasn't easy to cut into this old beauty for a whimsical addition to my new-found baking obsession. But cut I did, and the shavings went into the oven's first fire, fuelling an obsession that soon grew into love.

THIS PEEL HAS NOW helped in the birthing of more than fifty thousand loaves, and the little crack that is spreading up the blade from so many cycles of intense heat is the fault of neither maker nor tree.

This peel has served its time admirably and must soon hand off to a new plank of wood. Where that one will come from, I cannot tell and it could be a difficult search. I'll copy this peel pretty closely when that next board comes along, and I hope the new tool will one day feel as fine. But, when this old one is hung high on the wall, I will look up for the stories we remember together, and I'll thank it for helping me learn the journey from flour to the dark burnished loaf.



JESSE MERRILL had a bohemian childhood in British Columbia, Virginia, and Ontario, always surrounded by skilled craftspeople and artists. From an early age, he was determined to make a living with his hands.

He chose a career as a musical instrument maker, eventually landing in the central Ontario city of Guelph. There he worked as a restoration specialist at Folkway Music, one of North America's foremost purveyors of vintage American instruments.

AFTER A FULFILLING time working on some of the finest collections of old Martin and Gibson guitars, mandolins and banjos, he felt the need to create a living with a more direct involvement in community well-being. Out of his own kitchen grew what may have been Canada's first Community Supported Bakery project, modeled loosely on the Community Supported Agriculture movement.

Polestar Hearth remains a cottage in-

dustry, based out of a remodeled single-car garage and a big brick oven in the family's backyard. Their strictly naturally leavened breads are available through subscription to the CSB, although these days many loaves go to fine retailers and local restaurants. Inspired by Jesse's mother's weekly bread baking in a century-old wood cookstove, the focus of Polestar Hearth remains feeding good food to families, while providing a sustainable livelihood for several skilled craftspeople.

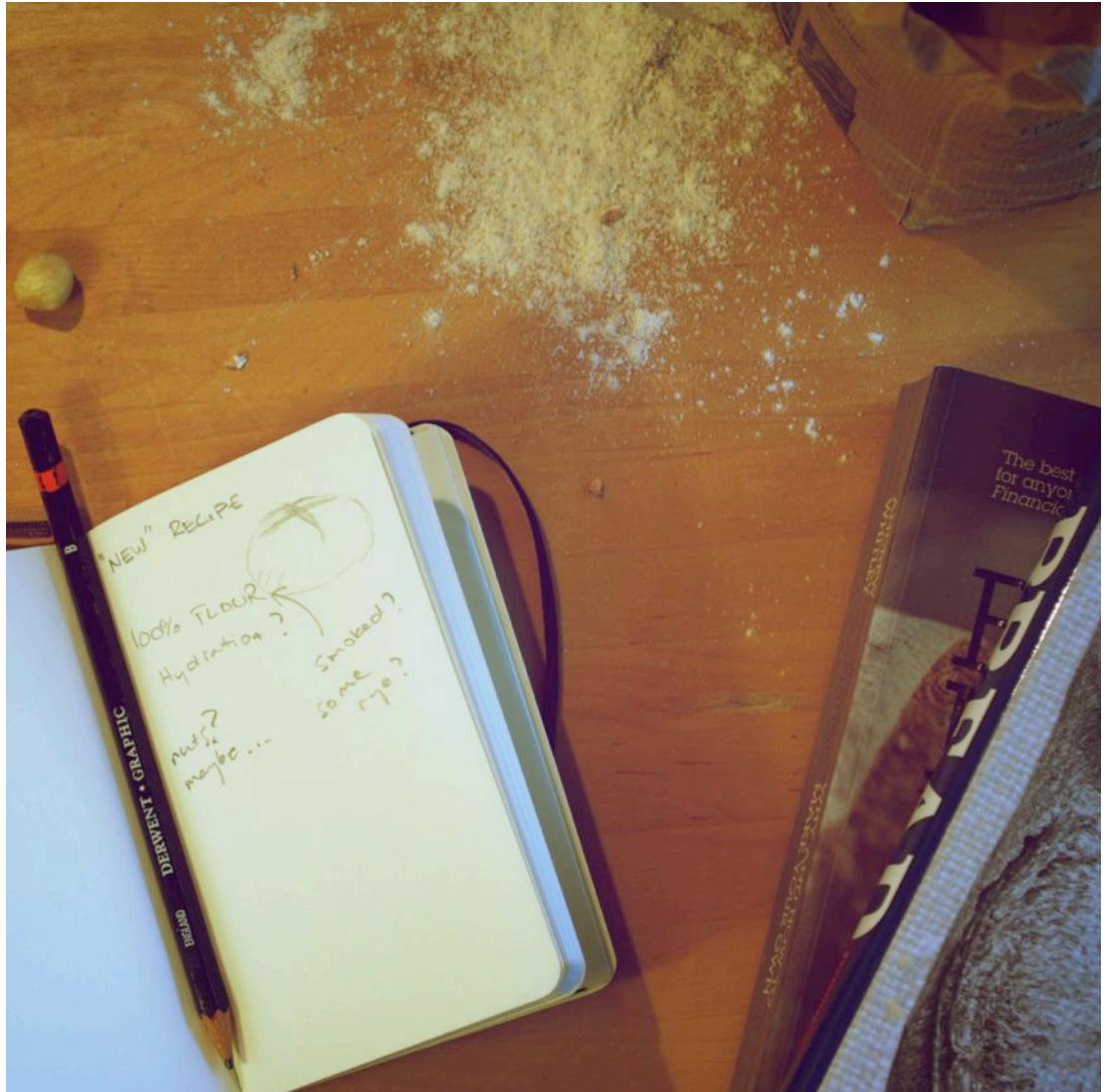
FOR MORE information on Polestar Hearth, visit their [web site](#) or like them on [Facebook](#).

NEXT ISSUE

IN THE NEXT ISSUE, right before Christmas, we will do a lot of planning and designing: Creating a bread formula, designing a bakery, and improving on a less than perfect loaf of bread are all among its topics.

The December issue will also be the last issue before we embark on a new year and a new adventure.

This, and much more at your e-mail inbox on December 18.



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