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## Bread and Time

Summer in the English countryside is enlivened by local competitions, some originating so long ago that the original point of rolling eggs down a hill or batting a piece of wood along winding lanes is lost to most of the participants. About twenty years ago, a new race was started - this time with pointlessness built-in. The challenge was to see who could make a loaf of bread quickest, starting with wheat standing in the field and following - after a fashion - all the normal stages of breadmaking. In the early years, the contestants would cut the wheat with a combine, drive the grain to a mill, then rush the flour to a bakery for the mixing, moulding, proving and baking. Times of under an hour were slated. But then it all got out of hand: someone set up a mill and an oven in the middle of a wheat field and claimed a finished loaf in under 25 minutes! Fanfares in the baking press, a handy donation to some good cause and satisfaction for the obligatory sponsor, no doubt. But the bread - if it could be called that - had been robbed of its essence: time. Without time to ferment the dough and allow the micro-organisms to interact, bread not only lacks flavour but may not be the staff of life we fondly imagine.

For the British baking industry in the past fifty or so years, a more serious race has been on: to make mass-produced bread as quickly as possible in the interests of profit and low prices. Most big plants moved to the 'no-time dough', in which a combination of high-speed mixing and chemical additives substituted for traditional fermentation. No-time dough: the very antithesis of leavened bread as it first emerged many thousands of years ago. For we may surmise that it was, above all, time which caused that first left-over piece of flour-and-water dough to surprise its maker by rising a little after a few hours of benign neglect. Wild yeasts in the flour, activated by water and warmth, began to ferment the starches, producing carbon dioxide which inflated the dough. Without time and watchfulness, there would be no bread as we know it.

In the pre-industrial era, time was an essential ingredient in breadmaking, even after the processes of fermentation were well understood. Before the advent of commercial yeasts, bakers had to make their own leavening mixture. There were various methods. Barm could be made by fermenting potatoes, barley malt or other suitable carbohydrate in a process similar to brewing; or flour could be mixed with water and left to form a sourdough by the action of wild yeasts and bacteria. Either way, it took days to produce a vigorous 'starter' culture, which, when mixed with flour to form a final dough, would take several hours to produce the necessary fermentation gases to raise the loaf. Even when chemists isolated the strains of the yeast *saccharomyces* most suitable for breadmaking, the resulting product, though highly concentrated, was relatively expensive. Strategies were found to eke it out. Rather than use enough yeast to raise the bread from scratch in a couple of hours, a much smaller amount was mixed into a wet flour-and-water dough called a sponge or ferment. This would be left for several hours (often overnight) until a vigorous fermentation was established and the yeast cells had multiplied many-fold, whereupon they were capable of raising a much larger bulk of

dough than earlier in the process. Time not only rewards the patient baker with an economy of raw materials. Something else happens as dough ferments: lactic and acetic acid bacteria start to develop. Over time, in warm conditions, they produce the ripe aroma and slightly tangy taste of well-fermented bread.

If watchfulness brought our first discovery of leavening, patience and care seem to have been integral to most of mankind's breadmaking until quick-acting yeast and mechanical power made such values redundant. So universal was the nostrum "time = money" in the bread business, that I was fourteen years into a baking career before I really began to understand how, in fact, wonderful bread needs plenty of time - and not a little love. The circumstances were unusual.

I had studied Russian at university and, fascinated by the language and culture, started a career as a producer in the BBC Russian Service, making programmes for a Soviet audience denied access to truthful information about Britain and the world. As I tried to understand and report on the incipient environmental crisis of the early 1970s, I felt a pull to live my own life in a more self-reliant, less damaging way. In 1976 I moved to Cumbria to grow my own food and started baking bread to help pay the mortgage. Russia seemed a thing of the past until, out of the blue, I was invited to visit by the brother of a former colleague. Perestroika was on the agenda and Russia was opening up. Sixteen years after my previous visit, I couldn't wait to go. To justify my self-indulgence and mollify the taxman, bakery research was the stated objective. My Russian host took me at my word and when I arrived in the ancient city of Kostroma in 1990, it seemed as though everyone, from bakery manager to passport officer, had heard of my mission to understand Russian bread.

Though I was warmly welcomed at the 100-ton-a-day bread factory, I felt that home breadmakers would be more likely to reveal the secrets of that quintessential sour rye bread which had once kept me alive on a student camping trip to Russia in the 1960s when failure to understand the exchange rate limited our menu to - what else? - the staff of life. So when my Russian friends dropped me at Nina's log cabin in the village of Teterinskoye on a snowy Saturday afternoon in February, I was ready to learn. I expected to watch her make bread there and then and bake it in the big masonry stove which occupied much of the house. But pensioner Nina was in no hurry. First we had to prepare the zakvaska or sourdough, a sloppy mixture of rye flour and water in which both wild yeasts and beneficial lactobacilli would begin to multiply, frothing the dough to the brim of the old enamel mixing bucket. As Nina talked with simple candour of life in a Soviet village from collectivisation to perestroika, I wondered when we would make the dough proper. "All in good time", she said, with a smile which turned to bemusement when I asked if I could spend the night on top of the stove, in the place traditionally reserved for baboushka, but in this gas-heated cabin now abandoned to two very territorial cats. From my first encounter with the wood-fired pechka in 19th century literature, it had seemed that to sleep on even its lower ledges would symbolise acceptance into the heart and hearth of Mother Russia. Any such romantic notions were progressively dispelled by the hard surface, suffocating heat and partisan raids by the displaced pets. Mercifully, breadmaking resumed at 4 am: the final stages had to be

started before church. The overnight sourdough had dropped back from its frothy peak and now smelled distinctly fruity, with a hint of vinegar. We added more rye flour, a thick black malt, water and a little salt and dropped the soft sticky dough into greased round tins. Nina smoothed the surface with a wet hand before making the sign of the cross over each loaf in a traditional gesture which perhaps combines hope of 'enlightenment' (for the bread) and thankfulness for impending nourishment.

We covered the tins with a damp cloth and set off down a snowy ravine to church. The significance of time is not lost on the Orthodox liturgy and more than three hours later we shuffled back to the cabin to find our bread nearly risen. The fire which Nina had set first thing in the morning had done its work. A quick scuffle of the oven floor to remove the cinders and in went the bread. An hour later, as Nina tipped the loaves out of the tins, tapped their bases and declared them done, my friends arrived to take me back to Kostroma. It was nearly twenty hours from start to finish and the warm loaf I cradled in my lap as we bounced over ice-rutted tracks brought home the link between patience and reward, time and real value.

For a sourdough system such as Nina's to work, a vigorous starter dough is needed. A small portion can be kept back each baking day and 'refreshed' with flour and water to begin the next batch. So some of the original brew of wild yeasts and bacteria would be transmitted to later doughs. It was this fact which encouraged me to accept the Kostroma bakery's offer of a piece of their rye sourdough in 1990. Refreshed and used almost every day since then, it has leavened over two million Village Bakery rye loaves in the past decade.

In Russia, it was common in peasant households for a young woman leaving home to get married to smear her new breadmaking crock with some of her mother's zakvaska to ensure that subsequent generations of dough would 'breed true' and make well-risen, tasty bread. Thus the baking of bread, far from being a one-off batch process dependent on yeast manufactured by microbiologists, is a never-ending cascade in which the leavening life-force is passed on and renewed through time.

Sourdoughs or leavens (the words are pretty interchangeable), in which time plays such a vital role, have other advantages besides economy and flavour. The action of the lactobacillus bacteria partially 'pre-digests' some of the starches in the flour, rendering the bread more digestible. Moisture retention and keeping quality are significantly better than in quickly made yeasted breads. Furthermore, in wholemeal or higher fibre breads, the sourdough process generates an enzyme - phytase - which neutralises the phytic acid which otherwise tends to prevent the uptake of calcium and magnesium by the human digestive system.

In modern commercial baking, there is pressure to make bread fast. Yeast is relatively cheap, so it 'pays' to use more. It is possible that excess yeast may not be fully fermented in a quick dough, leaving residues in baked bread which may progressively affect the gut flora. Is it any wonder that more and more people appear to be suffering from allergies to yeast?

Modern distribution systems, dedicated to provide multiple retailers with maximum freshness, interrupt the rhythm of time necessary to real bread. So we get 'bake-off', a generic term for giving a quick hot final 'bake' to bread which has been made and either part-baked or frozen unbaked at some earlier juncture. French bakers were so outraged by such violations of the breadmaking process that they succeeded in getting a law passed limiting the title *boulangerie* to places in which the five essential stages were completed in one uninterrupted time frame: mixing, fermenting, moulding, proving, baking.

Perhaps the failure to accord bread its rightful time is part of our modern cult of youth and the consumerist desire to replicate pleasurable experiences ad nauseam. You like it fresh, madam? Well then, have it fresh - hot, even - every day. We'll put some 'improvers' and 'flour treatment agents' in - as well as some enzymes that, thank goodness, we don't have to declare on the label - and your bread will stay 'fresh' for a whole week!

The trouble is that if absolute freshness (even the ersatz freshness of a 'baked-off' loaf) becomes our minimum standard, we progressively rob ourselves of the benchmark by which the true delight of freshness can be judged. Cream on top of the milk is a treat because it is richer and tastier. Try drinking only cream and you make yourself sick.

When bread was a vital source of sustenance, it was usually so hard won that throwing it away was a sin. Bread (like people) should grow old with dignity. Time unquestionably hardens the starches in baked bread. So we use it in different ways, dunking it in soup, toasting it, covering it trencher-style with succulent stews. Even when quite stale it still delights us, in summer pudding, croûtons or kvass.

Bread teaches us in so many ways that fulfilment follows effort and real nourishment needs patience and time. What price, then, instant gratification? As the old lady said, having queued at the new in-store bakery counter only to find that she was being asked to pay more for hot bread: "Oh, I'll wait until it cools down, then."

One of the joys of making bread is the opportunity to participate in a whole process whereby simple ingredients are transformed into a baked loaf. It is no surprise that the language of bread finds echoes in religious metaphor. From the germination of the good seed to symbolic identification with the body of Christ, bread speaks to us of becoming, of transformation. And that, it seems to me, takes time.