

**CONTEST: Enter ODYSSEY's Bread Bake-Off** p. 27

[www.odysseymagazine.com](http://www.odysseymagazine.com)

# ODYSSEY<sup>TM</sup>

ADVENTURES IN SCIENCE

A Cobblestone Publication • March 2009

**Master Baker  
Peter Reinhart**

Interview on p. 14

**Allergic to  
Bread?**

p. 30



**The  
Best  
Pizza Yet!**

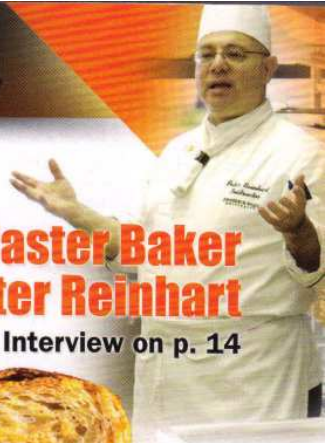
p. 41

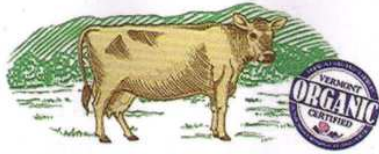
**Adventures  
with Yeast**

p. 28

**BREAD**

**Feeding the World**





# BUTTERWORKS FARM

## THE ART AND SCIENCE OF GRINDING GRAINS

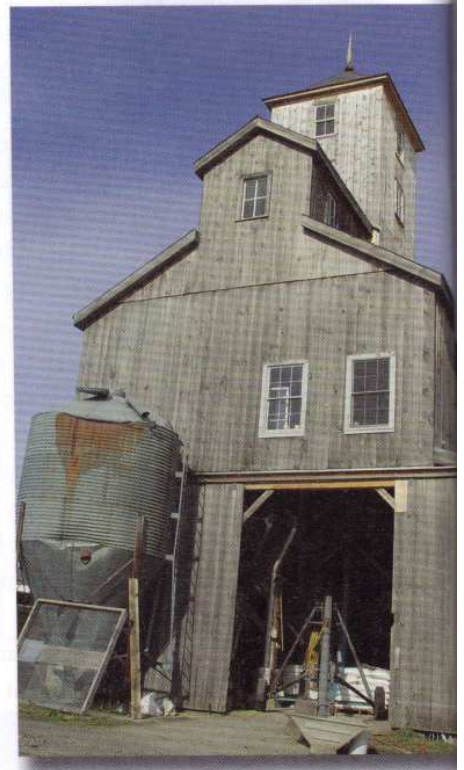
by Diane Nelson

**W**EDNESDAYS ARE GRINDING DAYS at Jack Lazor's Butterworks Farm in Westfield, Vermont. "Milling grain isn't very glorious," he says. "There's lots of dust and it's time-consuming."

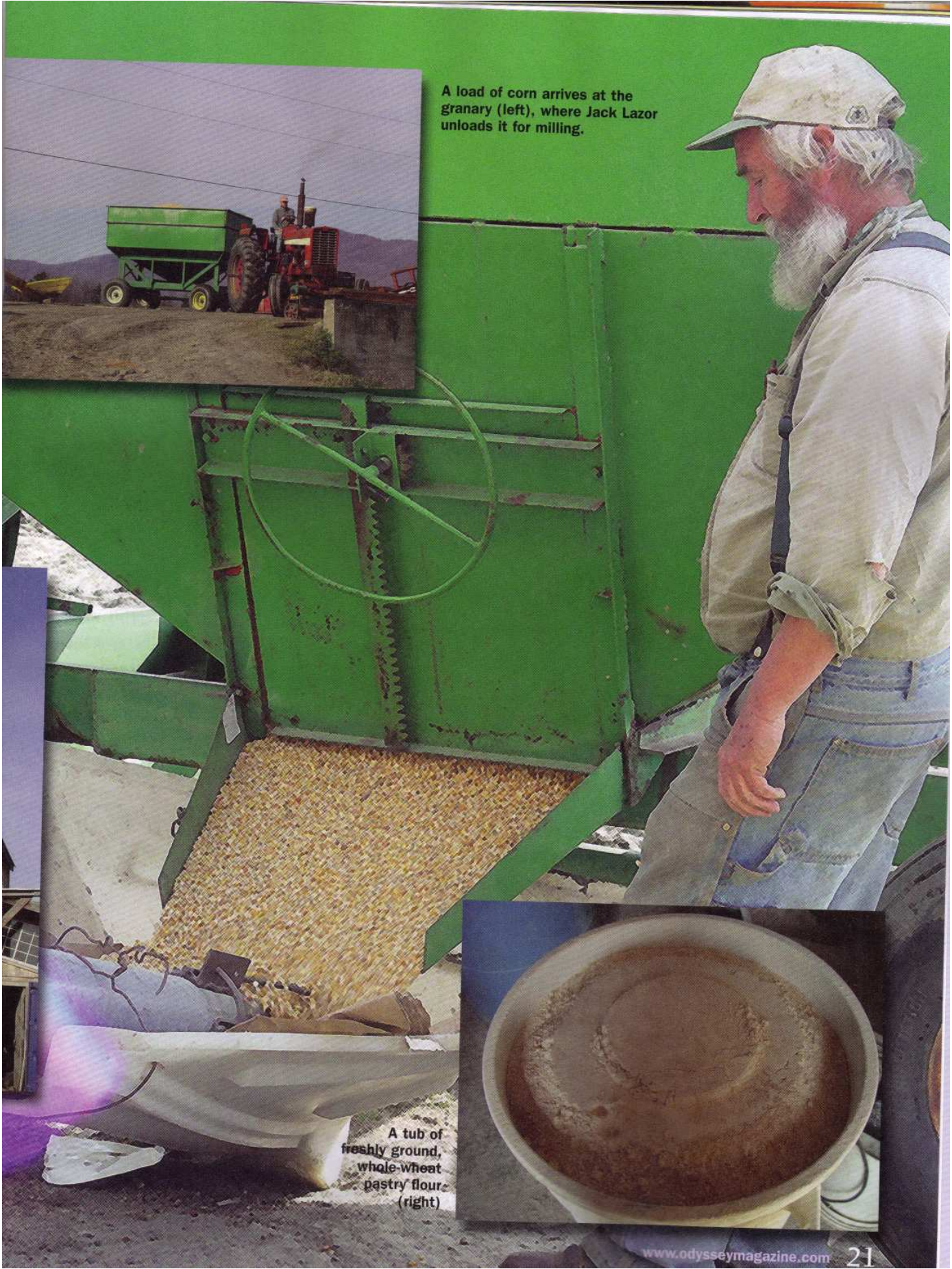
### The Miller

Historians would agree with Lazor. Although they like to say that we carry with us the earliest known tool for grinding wheat, corn, and other grains — our teeth — they admit that such a personal tool doesn't work when it comes to grinding grain into flour. In fact, perfecting the equipment for that process required experimentation. Hand-held grinding stones evolved to animal-, water-, steam-, and electricity-turned stones, as well as to rollers and other machines. As techniques improved, instead of just grinding enough grain into flour for family use, the miller began to grind neighbors' grains, too. Millers became buyers and sellers of grain locally, nationally, and internationally. Generations learned the milling trade through apprenticeship programs until organized education courses were offered in the 1800s.

Jack Lazor, however, knows the miller's objective has remained the same throughout time: to grind grain into flour efficiently and with the best quality possible. He believes some of the early techniques still produce the best results. For example, Lazor uses two stone wheels to grind his grain. The 16-inch Balfour pink granite wheels are quarried in the North Carolina foothills for Meadows Mills, Inc. Stored grain is cleaned to remove the *chaff* and then put into the mill for grinding. Lazor can adjust how close the stones are to each other as well as how fast the grain enters the grinder. "You want the stones as close as possible without touching and you want the grain to flow into the grinder at a constant rate but not too fast," he says. Lazor's mill grinds about 150 pounds per hour. Each week they produce 600 to 700

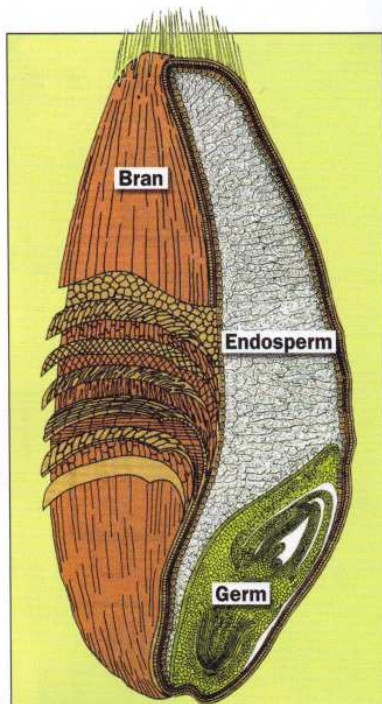


The granary and mill at Butterworks Farm



A load of corn arrives at the granary (left), where Jack Lazor unloads it for milling.

A tub of freshly ground, whole-wheat pastry flour (right)



## A Kernel of Health

- **Bran** — The outer covering containing fiber, B vitamins, and half or more of the grain's minerals. It is present in whole-wheat flour, but is removed during processing of all-purpose flour and other refined grains. It is also sold as a separate product.
- **Endosperm** — The main portion, containing carbohydrate, protein, and some B vitamins. It is present in all flours.
- **Germ** — Contains B vitamins, vitamin E, some minerals and a nutrient-rich oil that can cause flour to spoil more quickly. It is present in whole-wheat flour, but is removed during processing of all-purpose flour and other refined grains. It is also sold as a separate product.

pounds of flour that flows into large Rubbermaid tubs on wheels. Later, the flour is scooped into five-, 10-, and 25-pound bags that are stitched closed and sorted for delivery on Thursday mornings to markets around Vermont.

### Heritage Grains and a Whole Lot More

"You have to have quality wheat to get quality flour," Lazor says. Finding that quality has been a quest of him and his wife, Anne, since they started their dairy farm in the Green Mountains of northeast Vermont in 1976. Their original goal of producing food for themselves, their daughter, and their herd of Jersey cows has become a business capable of shipping more than 5,000 quarts of organic yogurt and about 1,000 pounds of organic flour and cornmeal a week to retailers. The farm provides a home and living not only for them but also for their daughter and her family plus several employees.

"I'm one of those crazy people who have to grow everything," Lazor says. Today, that "everything" can include three types of corn, dry beans, soybeans, field peas, flax, wheat, oats, barley, rye, and *spelt*, plus sunflowers that are pressed for oil in nearby Quebec. The dry beans are grown for people, but the soybeans are roasted and fed to the cows. Some of the corn is milled and some of the oats are rolled for human use.

**Spelt** — A hearty wheat grown mostly in Europe

**Slow Food** — An international organization founded in 1989 by Carlo Petrini of Italy to oppose a fast life style. Its goals are to produce food that is good, clean, with superb taste, and that is managed in a sustainable, healthy way and harvested in good working conditions. The organization also attempts to save unique varieties of foods, ranging from heritage apples and grains to unique animal breeds.



Gleaned wheat is milled into flour.

"We started growing wheat for our own bread in 1977," Lazor says. "We plant a hard red winter wheat and a hard red spring wheat — both for bread — because they have a high protein level and more gluten. We also grow a soft white winter wheat for pastry flour — it has a softer texture and is more flaky and fluffy."

A few years ago, the Lazors attended a *Slow Food* Conference in Italy where they heard about Red Fife wheat. Sometimes called the "grandfather wheat of Canada," it was grown on the Canadian prairies until it went out of favor in the 1950s. Lazor obtained some of the seed and is now one of the heritage (see sidebar, next page) wheat and seed farmers who are keeping the strain alive so that a new generation can discover its unique flavor.

# Know Your Grains

- The 2005 Dietary Guidelines for Americans recommend that at least half of the grain products we eat are whole grains. Visit: [www.mypyramid.gov/pyramid/grains.html](http://www.mypyramid.gov/pyramid/grains.html)
- Packaged whole-grain products may have a Whole Grain Stamp designed by the Whole Grains Council to help consumers identify products. Visit: [www.wholegrainscouncil.org](http://www.wholegrainscouncil.org)
- The milling process breaks whole grains into smaller particles. The resulting product is considered a whole grain if it still has the same proportions of bran, germ, and endosperm as the original grain fed into the mill. Refined grains have part or all of the bran and/or germ removed during milling. Enriched grain products have added iron, thiamine, niacin, and riboflavin plus folic acid.
- “Heritage” grains have been defined as those introduced in North America before 1960, or those that have come to North America with a cultural or ethnic group.



Separating the wheat from the chaff

“Most of what we grow is sold to other farmers as seed,” Lazor says.

As part of a sustainable agriculture research and education (SARE) grant from the U.S. Department of Agriculture, Lazor received “a handful” of seeds for 19

*heirloom* wheat varieties, including *emmer*, an ancient grain from the *Fertile Crescent*.

“We planted about 30 seeds of each in 2007 and are now concentrating on growing and replanting to increase the amount of seed,” Lazor says. “We’re watching how they perform in our climate and soil conditions. All heirlooms tend to be lower yielding than commercial varieties, but also tend to have a better flavor — they have a distinguishable taste; they aren’t bland,” he says.

## Tradition and Taste

Lazor’s experiments have attracted attention from farmers and bakery operators who want a locally grown supply of quality wheat and other

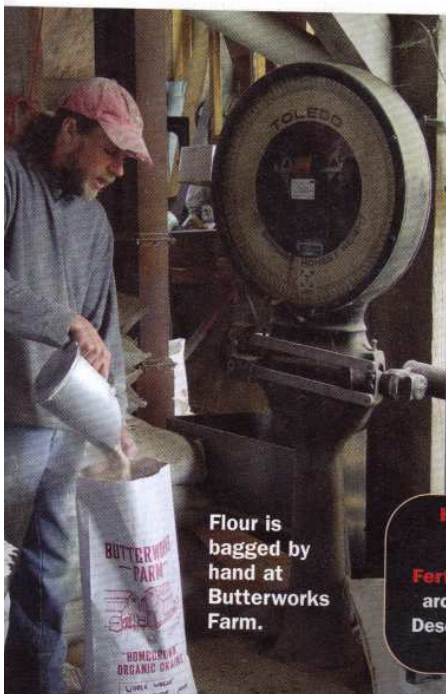
grains, as well as the heritage grain groups. There’s even talk that Vermont might revive some of the reputation it had as “New England’s Breadbasket” before travelers found more favorable wheat-growing conditions farther west.

“Wheat really wants to grow in North Dakota or Saskatchewan, [Canada],” Lazor says. “In our wetter climate here, we’re gambling every year if we’ll get a good crop or not.”

So, why does he continue?

“It’s about helping other people get started growing grains, even on a small scale, and providing education and outreach,” he says. “All of the old-timers who helped me are gone. I’m becoming an old-timer, I guess. [It’s] that, and we like to eat good food that we’ve grown ourselves.”

**Diane Nelson** bakes bread and writes in central Iowa. This is her second article for *ODYSSEY*.



Flour is bagged by hand at Butterworks Farm.

**Heirloom** — Something that is valued and passed on to succeeding generations

**Fertile Crescent** — A region of the Middle East arching across the northern part of the Syrian Desert and extending from the Nile Valley to the Tigris and Euphrates rivers