



## Adam, Iceman and beyond: Ancient grain revival

BY LAURA HUNT ANGEL  
SPECIAL FOR THE MESSENGER

If you're into cooking at all, you may recall a few years back when a new grain substitute hit the health food aisles. Suddenly, quinoa (pronounced "keen-WAHN") was everywhere and in everything. Labeled a superfood, the pre-Columbian peoples of ancient Bolivia and Peru used quinoa similarly to the way that we use wheat today.

Another South American "un-grain" that's sometimes used in place of starch is the chia. Remember those 1980s "Ch-ch-chia!" commercials that appeared every holiday season for years? Well, they've come a long way since then, from a slightly bizarre and useless gift for Uncle Fred to a premiere health food.

Since the successful introduction of these "un-grains," health food marketers have been scouring the globe for a healthy yet satisfactory stand-in for our white flour obsession. One of the most interesting has just hit the food scene. Read on, I promise it won't be boring.

### MEANWHILE IN MESOPOTAMIA

Some 7,500 years ago, an industrious farmer got the idea to try and cultivate the wild wheat that was scattered all around his property. The wheat took well to cultivation, and soon all the farmers in the neighborhood were growing it in abundance. The success of those early wheat crops ushered in an entirely new era of sustainable agriculture, and humanity took a giant leap forward.

The region the farmer lived in was between the Tigris and Euphrates rivers, in what is known as the Fertile Crescent. Remnants of that same uncultivated wild wheat have been discovered at archeological sites dating to more than 12,000 years old.

Today, the wheat the farmer grew is known as Einkorn, but some still call it Adam's wheat. While the moniker may seem audacious, it's quite within the realm of possibility that Adam himself enjoyed this very grain. The wild version of Einkorn wheat still grows in Mesopotamia and throughout much of Europe.

### OTZI THE ICEMAN

In early autumn of 1991, a couple of German tourists decided to take a jaunt through the mountains that run along the border between Austria and Italy. While Helmut and Erika Simon were hiking along the



Clockwise from top: Einkorn wheat flour, flax, almond flour, chia seeds and cracked barley. A stalk of whole barley marks the center.



Katherine Winnick is pictured as Lagertha, the female warrior on History Channel's "Vikings."

Finleitzspitze, a popular hiking trail in the Otztal Alps, they came across what appeared to be the body of another hiker.

The next day, several others climbed the 10,000-plus feet up the ridge to view the body and to try and dislodge it from the frozen ground. World renowned mountaineers Hans Kammerlander and Reinhold Messner joined the attempt and succeeded in removing the remains a couple of days later. From there, it was taken to a local medical examiner's office for possible identification.

Based on the remains and

the articles found with it, it was determined that the body was not of a recent hiker, but that of a man who had made the trek roughly 4,000 years before Helmut and Erika made their discovery. The unknown man was nicknamed Otzi, after the mountains in which he was discovered.

After thorough examination and testing, it was discovered that Otzi had been shot in the shoulder with an arrow and also suffered a blow to the head. Neither of these acts were the direct cause of his death, though. Otzi died of

hyperthermia. In addition to this and many other interesting facts concerning Otzi, researchers learned that his final meal consisted of meat, herbs and bread made from Einkorn wheat.

### THE BIG BAD "G"

Over the centuries, the wheat that Otzi ate and those early Mesopotamian farmers grew was tinkered with to improve crop yields and to create a softer, fluffier loaf of bread. However, in the process these changes increased the likelihood of digestive issues upon consumption.

The primary culprit was the gluten. All of that experimentation had altered and increased the amount of gluten in the wheat, and many people who consumed it found it nearly impossible to properly digest. For decades, nothing much was done to fix the problem because no one realized that the issues arose not from the wheat itself, but from all of the adjustments that had been made to it over time.

In the waning years of the 20th century, when marketing heritage produce became a lucrative endeavor, another side effect occurred: people who had

a gluten sensitivity discovered that consuming bread made from the original, unaltered form of wheat did not cause stomach upsets.

And voila, Einkorn entered the marketplace. Soon, it will be coming to a place near you. Until then, though, it can be purchased via Amazon.com, Kroger's Vitacost.com or, presumably, one of those kitchy health food stores. Keep in mind that folks with true Celiac's disease will still have major issues with Einkorn, but for many others it allows them to enjoy wheat-based items again.

### ARE YOU A VIKING?

SCENE: An innocent maiden screeches in horror as she is bound with a thick rope and tossed onto a ship. The ship is set ablaze and quickly shoved off into an icy fiord. (END SCENE.)

No mention of that in your family tree? Well, even if your last name doesn't end in -son, as in "Johnson," or -by, as in "Hamby," you could still be a Viking. Like the Phoenicians before them, ancient Nordic peoples were seafaring explorers. So much so that Viking DNA has melted into the bloodlines of all sorts of folks, making it often difficult to isolate.

As interesting as the big horns on their helmets and that whole sacrificial maiden thing may be, there was a whole lot more to ancient Viking culture. Take mealtime, for instance. In addition to cold water seafood, lamb and fresh vegetables, their meals were often supplemented with wild mushrooms and other foraged foods. Along with these staples, Nordic peoples did — and still do — eat lots more whole grain than we here in the New World do.

If you could peek into the larder of an ancient Viking, you wouldn't find much in the way of "fluffy flour," as wheat and oats are relatively recent introductions to the Nordic diet. Hearty, cold weather grains like barley and rye were much more common and remain so today. Unbeknownst to most diners, gourmet menu items such as barley pilaf and those fancy little rye crackers and cocktail loaves are Viking innovations. So, the next time you hear the proverbial fat lady singing, offer her a sincere thank you for the contributions of her people to your dinner plate. And remember this old Viking saying:

SEE REVIVAL/PAGE C2

## We need understanding, not pitchforks

There's been considerable news lately about genetic diseases, gene therapy and genetic engineering.

Genetics is one of those subjects in the sciences that gets a lot of attention with a great deal of good and bad information floating around. A lot of people with various differing agendas have things to say about genetics and, in particular, genetic manipulation. If you've been reading my column for a while, you should be aware that the reason I write is to try to raise the level of science literacy in the community and to try to demystify science to make it more accessible for people.

In that early column, I also went a little bit into why I think science literacy is so important. One of my reasons was that science and technology have tremendous power in our modern age, and I listed a few areas of science of particular real or potential power. Genetics was one of the areas I singled out as having immense impact on our lives in many ways. Today,

with all that is going on, I think I would like to try to provide a little bit of literacy on the science of genetics.



MICHAEL J. HOWARD

We've already touched on what a gene is — it is the information, coded in the DNA in each living cell, that provides the instructions, or the "recipe," if you will, for the cell to make proteins. Since all of the structure and function of the cell is controlled by the proteins it makes, it is vitally important that the cells make only the right proteins at the right time. If a cell fails to produce a particular protein, for instance a hormone like insulin, at the proper time when it is needed, it could have grave consequences for the organism.

Most proteins are very large and complex molecules, and to function properly, they have to be constructed exactly right, with often thousands of individual amino acids being joined together in precisely the right order. One single amino acid in the wrong place can cause an entire protein to be nonfunctional. The DNA code

is what tells the protein-making machinery in the cell which amino acids to add to the new protein and in what order they should go.

If there are errors in the DNA, or if particular chunks of DNA are missing entirely in the cell, the cell will not be able to do what it is supposed to do. The result of these errors is usually one of three things. If the genetic error affects a protein of great importance, the organism will usually fail to develop properly early on and will not survive the development process. If the error leads to a malfunction that is not quite as severe, the organism may survive, but with some degree of dysfunction that may manifest itself later in life. If DNA that affects how cells control their growth and cellular reproduction is damaged, the result is often cancers of various types.

That is a very much too quick overview of how genes work under normal circumstances. If there is interest, we can go into that in more detail another time. People have known that certain characteristics run in families for goodness knows

how long. People have been breeding animals with desirable traits together to get offspring with better combinations of traits for thousands of years. Gregor Mendel, an Augustinian monk born in the Czech Republic in 1822, did some remarkable experiments with plants that demonstrated the passage of specific traits from one generation of plant to the next.

It wasn't until the 1950s, however, with the discovery of the structure of DNA by James Watson, Francis Crick, Rosalind Franklin, Maurice Wilkins and others, that we were able to understand just how those characteristics were passed on. With the discovery of DNA and our need to study and understand this most basic aspect of biology, the scientific disciplines of genetics and molecular biology were born.

As human understanding of our world and ourselves grows, it often generates uneasiness in us. Science, particularly very fundamental and very powerful aspects of science, both rightly and wrongly, raise questions of how our new and growing knowledge can and

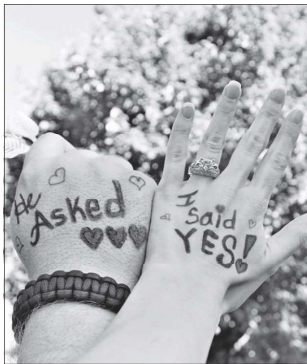
will be used. This has always been true, but as the pace of our knowledge of science and technology has accelerated over time, particularly since the Industrial Revolution, beginning in the mid-1700s, it has often tapped into some of our deepest fears. Mary Shelley wrote a book, subtitled "The Modern Prometheus" in 1818 that was and probably remains the best book ever about the power of science and how science and technology can influence people and society. You might be more familiar with the main title of the book — "Frankenstein."

I have already done a column on genetically modified organisms, or GMOs, so I won't rehash that, although the subject remains one that is near the front of people's minds. Instead, we will explore on the subject of genetic diseases in humans and how gene therapies can impact some of those diseases.

You might have heard recently about how gene therapy was used to treat a cancer of the blood cells, called lymphoma. In lymphoma and related cancers,

SEE HOWARD/PAGE C4

## ENGAGEMENT



## Spears — Edwards

Ashley Spears of Madisonville is engaged to be married to Corey Edwards of Dickson, Tennessee.

## The blessing that is Actors Theatre of Louisville

The Pamela Brown. The Bingham. The Victor Jory.

These are the three current theater spaces nestled in the heart of downtown Louisville, less than a three-hour drive from Madisonville. Together, with the staff and directors and acting professionals, these comprise one of the great jewels in Kentucky — Actors Theatre.

They are beginning their 2017-18 season with a powerful and relatively recent theatrical offering, Kushner's "Angels in America," in two parts. In October they run a tradition of a Dracula play, followed by a handful of winter offerings ("A Christmas Carol"), and then in mid-spring they present the Humana Festival.

Most theaters are places where a traditional set of pieces are performed. You can bet on there being a Shakespeare play at many venues, as well as some standbys from the American theatrical tradition — a Tennessee Williams piece such as "Glass Menagerie" or "Streetcar Named Desire," or perhaps an adaptation of Miller's "Death of a Salesman." Given the recent death of Sam Shepard, I predict we will see mountings of "Buried Child," "True West" (watch out for the toasters) and "Curse of the Starving Class."

But the over-the-top way-coolest thing about Actors Theatre is that they launch new plays. Tell me where you can go, other than New York City, to see new plays produced for the first time on the stage in front of you. Amazing.

Instead of experiencing a play that is well known, we can sit through the unfolding of a story

without having any idea of what will happen next. It is fine to celebrate the golden oldies, but here, in our state, we can see entirely new plays that are fresh, relevant, and unpredictable.

One of the staff, the dramaturge, who researches the plays and advises the directors and producers, told me that they receive upward of a 1,000 new plays vying to be included in the Humana Festival, and that typically 10 are chosen for full production. On top of these are the shorts — the 10-minute playlets that are also part of the festival. All of these new offerings arrive in mid-spring. If I'm having a good year, I'll have attended at least four productions at Actors.

I'll sum up why this is important by quoting from the Actors Theatre website: "Entering its 54th Season, Actors Theatre of Louisville, the State Theatre of Kentucky, is the flagship arts organization in the Louisville community. Under the leadership of Artistic Director Les Waters, Actors Theatre serves to unlock human potential, build community, and enrich quality of life by engaging people in theatre that reflects the wonder and complexity of our time."

Have a great theatrical day.

Scott Vander Ploeg, Ph.D., is a literary critic and 37-year veteran educator who offers to help elucidate the complex and evolving world of the humanities.



SCOTT VANDER PLOEG  
NOTABLE MESSAGES



Laura Hunt Angel

Sourdough pumpnickel was a staple food of many ancient Europeans, especially Vikings.

## REVIVAL

FROM PAGE C1

"Always rise to an early meal, but eat your fill before a feast. If you are hungry, you have no time to talk at the table." — The Havamel

### THE RECIPES

Recent studies have shown that the addition of a sourdough starter to bread lowers the overall glycemic index, meaning that as long as you don't add a ton of sugar to your recipe it's one of the best bread options for a diabetic diet.

Pumpnickel is a type of rye bread that is traditionally made with sourdough. You can skip the sourdough and use regular yeast, but making and keeping a starter on hand is well worth the effort. In combination with its whole grain content, a good loaf of sourdough pumpnickel has a glycemic load of only around 46. If you do not keep a sourdough starter in your kitchen, you will have to wait about a week before you can make this bread.

### SOURDOUGH STARTER

1 cup rye flour

1 cup water

Additional flour and water

Place the flour and water in a clean glass bowl or small crock, stir well and cover lightly with cheesecloth. Place near an open window or in an area that gets plenty of air circulation, as the starter needs to absorb natural yeast from the air. Every day for the next five to seven days, add about a half cup each of flour and water and stir the starter well. (The mixture should remain the consistency of pancake batter, so adjust water if needed.) It's important to add flour and water and stir every day or your starter will spoil. After five to seven days, your starter should be ready to use. The night before or several hours before baking, feed your starter again so that it will be very active when you bake.

### PUMPNICKEL SOURDOUGH BREAD

1 cup sourdough starter  
½ teaspoon dry yeast (optional, to speed rising)  
1 ½ cups lukewarm black coffee  
2 tablespoons molasses  
1 tablespoon cocoa (optional, to make the bread extra dark)

1 teaspoon salt

1 cup rye flour

1 ½ cups Einkorn flour, divided, plus extra for dusting

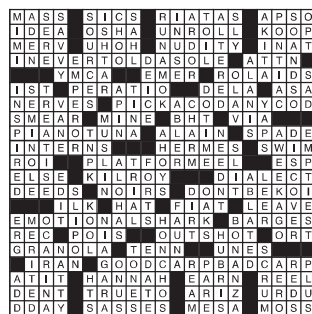
Combine all except 1 cup of the Einkorn flour in a large bowl and mix until the liquid is absorbed. The dough will be very sticky. Using floured hands, turn the dough out onto a well-floured surface and work in the remaining 1 cup of flour by hand. Place dough in a well-oiled bowl, cover with a

cloth and let rise until doubled in bulk. Work dough down and shape it into an oval. Let rise again for about an hour or until doubled (this will take longer if you did not add yeast).

Preheat the oven to 350 degrees F, and preheat a baking stone if you have one. (If not, just place the bread on a baking sheet when ready.) Carefully place the bread on the stone or baking sheet. Cut

shallow slashes across the top to aid rising and brush with a beaten egg if you wish. Bake for about 35-40 minutes or until the loaf sounds hollow when tapped. Cool before slicing.

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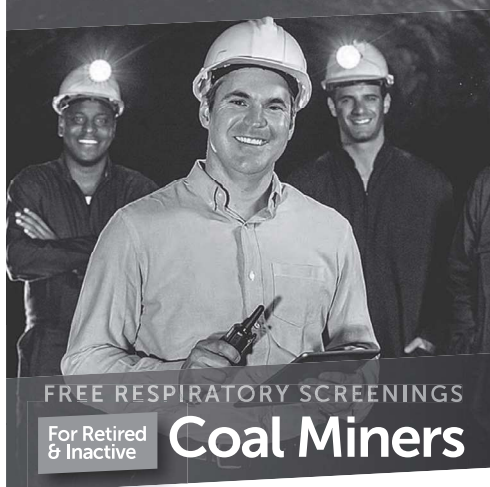
## PUZZLES ON PAGE C3

### JUMBLE

Answer :  
ABRUPT GLITCH ENGULF  
EXPRIE GOTTEN SHADOW  
The archaeologists once dated and couldn't help —

DIGGING UP  
THE PAST

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