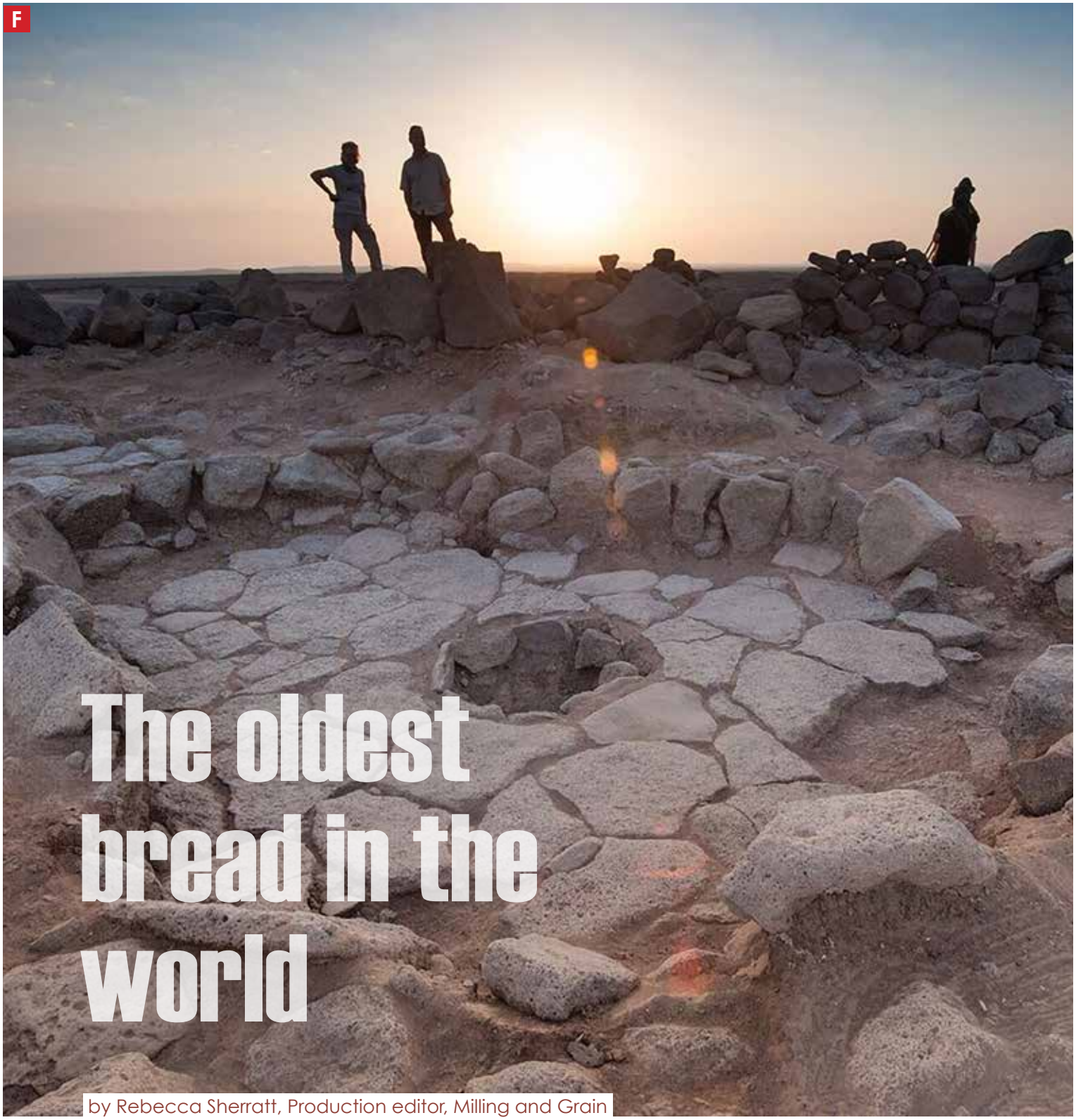

The oldest bread in the world

by Rebecca Sherratt, Production editor, Milling and Grain

Scientists at a 14,000-year-old dig site have uncovered the earliest-known evidence of bread-making. Found in the Black Desert in Amman, Jordan, this shocking discovery has extended the first evidence of bread by more than 5,000 years.

The advent of agriculture, before this amazing find, was originally predated 4000 years later, leaving scientists baffled by the revelations this ancient loaf has given us. Before this, it was originally thought that the Neolithic people of the Stone Age were the inventors of bread, 9,000 years ago, in Çatalhöyük in Turkey.

The Neolithic people made bread by producing flour, comprised of wild barley and wheat, mixing it with pulverised roots of plants, adding water and baking it.

"This is the earliest evidence we have for what we could really call a cuisine, in that it's a mixed food product," Professor Dorian Fuller of University College London says to BBC News. "They've got flatbreads, and they've got roasted gazelles and so forth, and that's something they are then using to make a meal."

The ancestral loaf was possibly used to wrap roasted meat, such as gazelle, which could also make this the oldest sandwich ever discovered. Scientists have noted that the bread would have resembled our modern-day flatbreads; a pitta bread or chapatti, whilst tasting much like our multi-grain breads.

An extended history

Despite bread being a staple of our diet for what we now know is an ever more extensive period of human history, very little is still known about the origins of bread-making.

Prior to this discovery, the unearthing of the 9,000-year-old Turkish loaf was founded and considered the oldest evidence of bread making. Scientists then analysed these under a microscope, the bread showing signs of various modern processes of bread-making, such as kneading, grinding and sieving.

The 14,400-year-old Natufian hunter site in the Black Desert, where the bread was located, was known as Shunayqa One, in North-East Jordan. The site has previously been subject to extended expeditions and scientific investigations. Buildings containing fireplaces there were uncovered by British archaeologist Alison Betts in the 1990s, and since then the location has proven to be repeatedly blessed. Four more excavations were carried out at the site, between 2012 and 2015, where charred food was also discovered, along with animal bones, plant remains and ground stone tools.

Dr Amaia Arranz-Otaegui of the University of Copenhagen, who was the one to discover the ancient loaf, said she had never expected to make such a discovery.

"Bread is a powerful link between our past and present food cultures," she says. "It connects us with our prehistoric ancestors."

This new form of prehistoric bread, Dr Arranz-Otaegui notes, would have been produced in several stages, including

Ancient bread recipes

A Turkish bread recipe (8000-7000 BC)
Make flour from domesticated wheat and barley
Add ground beans such as chick peas and lentils
Mix with water
Cook in an oven.

A Jordanian bread recipe (12,000 BC)
Make flour from wild wheat and wild barley
Pound tubers of wild plants that grow in water to a dry pulp
Mix together with water to make a batter or dough
Bake on hot stones around a fire.

"grinding cereals and club-rush tubers to obtain fine flour with water to produce dough, and baking the dough in the hot ashes of a fireplace or in a hot-flat stone."

The fact that this bread is even older proves particularly interesting, as the Natufian period (the era in which this bread was dated), has often been described as a transitional period, where humans became somewhat more sedentary and their diet therefore began to change. Hunters became under less pressure to track and kill wild animals, as we discovered the magic of farming and grain. Flint sickle blades and other stone tools used for farming were first invented in this period, compared to the earlier era's knives and spears.

Professor Dorian Fuller, also of the UCL Institute of Technology, says "bread involves labour intensive processing which includes de-husking, grinding of cereals and kneading and baking. That it was produced before farming methods suggests it was seen as special, and the desire to make more of this special food probably contributed to the decision to begin to cultivate cereals. All of this relies on new methodological developments that allow us to identify the remains of bread from very small charred fragments using high magnification."

Scientific deductions

Scientists from the UCL Institute of Archaeology, who analysed the 24 bread crumbs found, have also voiced the intriguing possibility that growing the cereals for this form of bread may have been the influence that kick-started the farming industry.

"The significance of this bread is that it shows investment of extra effort into making food that has mixed ingredients," says Professor Fuller. "So, making some sort of a recipe, and that implies that bread played a special role for special occasions.

"That in turn suggests one of the possible motivations as to why people later chose to cultivate and domesticate wheat and barley, because wheat and barley were species that already had a special place in terms of special foods."

Scientist Lara González Carretero, who studied the discovered crumbs with electron microscopy at a UCL lab and is an expert on prehistoric bread, commented that the bread's ingredients were notably "wild wheat and wild barley flour, mixed with water and cooked on a hearth in a fireplace." She also notes that the tuber flour also used would have granted the bread a "slightly nutty, bitter flavour to it."

These findings, recently published in the journal Proceedings of the National Academy of Sciences, note that the wild cereals used to assist in bread production may have prompted contemporary hunters and gatherers to farm and cultivate more cereals, leading into the more widespread agricultural innovations of the Neolithic period and onwards.

Research continues

Research at the archaeological site in Jordan continues. The University of Copenhagan team also received a grant to ensure that they can efficiently carry out their research, exploring how the transition from the recently discovered loaf, through to the Neolithic period, is uncovered.

The UCL archaeobotany team, with the support of a PhD studentship funded by the UK Arts and Humanities Research Council, are also conducting research on the identification of early bread and other food remnants from Iranian and Turkish Neolithic sites.