

What's Happening

I N T H E W O R L D ?

BY LAWRENCE GABLE

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Paint Tells About Early Humans

Blombos is a small cave on the southern coast of South Africa. Since 1992 archaeologists have been digging there and making big discoveries. In October they announced their most recent discovery, proof that humans were mixing paint there 100,000 years ago. That discovery changes their view of humans' earliest ancestors.

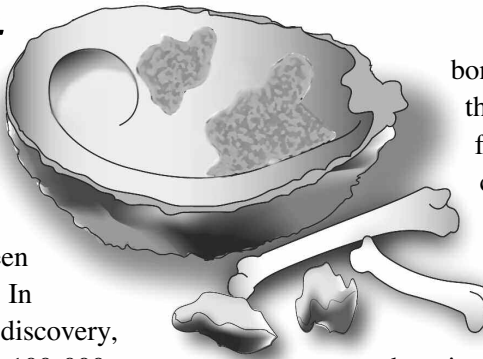
Blombos Cave lies about 150 miles east of Cape Town. It is in a cliff that faces the Indian Ocean. About 70,000 years ago winds blew sand that blocked the cave's entrance. Nothing has happened there since, of course, but archaeologists are learning that a lot happened there before that.

Over the years archaeologists have dug through several layers of the cave's floor. In 2001 they reported their discovery of tools made from animal bones. They also found more than 400 pointed stones that had been tips of weapons. The team also gathered hundreds of pieces of soft stone called ocher. Humans had marked two of the pieces with artistic triangles and horizontal lines. In 2004 the team also unearthed a collection of 60 decorative shell beads that humans had painted. They are about 75,000 years old, and scientists have thought they are the oldest pieces of art.

Ocher plays a significant role in early paint. Because it is soft, early humans could grind it. The stone has iron in it, which gives it a red or yellow color. The color from the ocher gave the paint its pigment.

As the team continued to dig, it reached a third, older level of the cave's floor. There it found two "tool kits" for making paint. Each one had an abalone shell and tools for pounding, grinding and mixing materials. One shell was covered with red pigment. The other shell was broken, but its grinding stone was covered with red and yellow pigments. Hardened sand formed a tight seal that protected the kits from damage by air and light for 100,000 years.

Making the paint involved several steps. First the people probably rubbed ocher on the grinding stone until it became a powder. They also heated animal



bones, then crushed them so that they could remove the marrow fat. Then they put the powder, crushed bone and fat in an abalone shell and mixed in charcoal and stone chips. They added a liquid, probably either water or urine, to the mixture. It finally became paint

when they stirred everything with a bone.

The cave probably served only as a kind of artist's studio. The team did not find a fireplace, for example, that would signify that people had lived there. They also did not find signs of food. Archaeologists think that perhaps only one or two artists went from their nearby community to the cave. The other came from miles away, and along the way the artists probably also collected stones, bones and shells. Before they left the cave for the last time, they put everything in neat stacks.

Researchers have some ideas about how the people used their paint. They believe that early humans decorated their skin or clothing, or used it in rituals. They also may have used it as protection for their skin. Today some groups in southern Africa still paint their bodies with ocher.

This discovery reveals the complexity of early humans. Paint is different from practical things like tools, weapons and utensils. Paint is not practical. Instead it reveals the ability of early humans to think symbolically. That ability led to the evolution of language, for example. If humans used paint to identify themselves to others, it shows a complex society. It means that individuals had contact with groups other than their own.

Until now scientists believed that the human "creative explosion" had taken place 60,000 years ago. That was the time of the earliest self-expression through things like decoration and cave paintings. This discovery at Blombos Cave now proves otherwise. It shows that humans who lived 40,000 years before that were smarter than scientists had realized. They were capable of planning, so their actions were more similar to modern humans' behavior than scientists ever knew.

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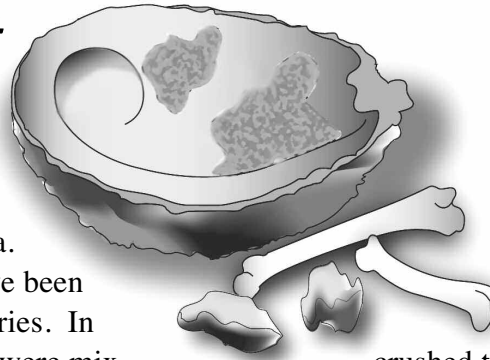
Since 1992 archaeologists have been digging there and making big discoveries. In October they announced that humans were mixing paint there 100,000 years ago. That paint changes their view of early humans.

Blombos Cave lies in a cliff that faces the Indian Ocean. About 70,000 years ago winds blew sand that blocked the cave's entrance. However, archaeologists are learning that a lot happened in the cave before that.

Over the years archaeologists have dug through several layers of the cave's floor. In 2001 they reported their discovery of tools made from animal bones. They also found more than 400 pointed stones that had been tips of weapons. The team also gathered hundreds of pieces of soft stone called ocher. Humans had marked two of the pieces with artistic lines and triangles. In 2004 the team also found a collection of 60 painted shell beads. They are about 75,000 years old, and scientists have thought they are the oldest pieces of art.

Ocher was an important part of paint. Because it is soft, early humans could grind it. The stone has iron in it, so it has a red or yellow color. The ocher gave the paint its color.

As the team dug, it reached older levels of the cave's floor. There it found two "tool kits" for making paint. Each one had an abalone shell and tools for pounding, grinding and mixing materials. One shell was covered with a red color. The other shell was broken, but its grinding stone was red and yellow. Hardened sand formed a tight seal around the kits for 100,000 years.



Making paint had several steps. First, the people probably rubbed ocher into a powder on the grinding stone.

They also heated animal bones, then

crushed them to remove fat from

them. Then they put the powder, crushed

bone and fat in an abalone shell. When they added water, the mixture became paint.

People did not live in the cave. There is no fireplace, for example, and there are no signs of food. Archaeologists think that perhaps only one or two artists went from their nearby community to the cave. The ocher came from miles away, and along the way the artists probably also collected stones, bones and shells.

Researchers have some ideas about how the people used their paint. They probably decorated their skin or clothing, or used it in rituals. They also may have used it to protect their skin.

This discovery reveals the complexity of early humans. Paint is different from things like tools and weapons. Paint is not practical. Instead it shows the ability of early humans to think symbolically. That ability led to the evolution of language, for example. If humans used paint to identify themselves to others, it shows a complex society. It means that individuals had contact with groups other than their own.

Until now scientists believed that the human "creative explosion" had taken place 60,000 years ago. That was when humans started to express themselves through decoration and cave paintings. The paint at Blombos Cave now proves that humans 40,000 years before that were capable of planning. In that way they were more similar to modern humans than scientists ever realized.

Background Information

Blombos Cave stands about 100 yards from the ocean and 40 yards above sea level.

The team found the tool kits for paint in 2008. They described their discovery in the October 2011 issue of *Science*.

The team's lead researcher was from the University of Bergen in Norway. The team included researchers from Australia, France and South Africa.

Scientists are astonished that the humans knew to find, transport, store and combine the things they needed for making paint. The researchers say that the humans not only were capable of planning, but that they also had an understanding of basic chemistry and the natural world.

Experts at the Louvre museum in Paris performed the analysis of the paint.

The Blombos Cave apparently has no drawings or paintings on its walls. The oldest known cave paintings are in France, and are about 40,000 years old. The fine paintings of animals on the cave walls at Lascaux, France, date from only 17,000 years ago.

The spear points at Blombos Cave are also important. They are about 70,000 years old. Until now the oldest examples of that technique for making them were on spear points in Europe that were only 20,000 years old.

Twenty-seven of the decorative beads at Blombos Cave probably came from a single personal ornament.

Early humans used ocher to put color on things before they actually made paint. Archaeologists believe that humans may have connected the color red with blood, so it may have symbolized either life and death, or menstruation and fertility.

Groups in southern Africa today use paint to identify their group, show whether or not they are married, and serve as sunscreen and insect repellent.

So far the archaeologists at Blombos Cave have found only nine human teeth.

The fact that the grinding stone was coated with both red and yellow suggests that it had been used more than once.

Topics for Discussion and Writing

Pre-reading:

- When archaeologists find things from early human beings, what sorts of things do they find?

Comprehension:

- What have archaeologists found in Blombos Cave?

Beyond the Text:

- How did the sand protect the paint in Blombos Cave?
- What is the difference between "South Africa" and "southern Africa?"
- List a few practical and impractical modern uses of paint.

Vocabulary (*advanced article only)

Article-specific: archaeologist; ancestor*; cliff; horizontal*; bead; pigment*; marrow*; abalone shell; ritual

High-use: layer; triangle; significant*; to grind; seal; to signify*; community; complexity; practical; to reveal; symbolically; evolution; to identify; otherwise*; capable

Sources

Pittsburgh Post-Gazette October 19, 2011

Vancouver Sun October 15, 2011

New York Times October 14, 2011

Los Angeles Times October 14, 2011

The Guardian (London) October 14, 2011

CA Curricular Standards (4–12)

English-Language Arts

Reading 1.0 Vocabulary Development

2.0 Comprehension (Informational Materials)

Writing 1.0 Writing Strategies

2.0 Writing Applications

ELD—Intermediate and Advanced

Reading Vocabulary Development/Comprehension

Writing Strategies and Applications

Listening and Speaking

History-Social Science

5.1; 6.1