

Using Minerals In Art

Minerals are everywhere you look, even in paintings. Elements make up minerals, minerals make up rocks, rocks make up the crust of the Earth and it goes on in a line segment. Minerals used in paintings are chosen in many civilizations through time. Beautiful paintings are made with minerals such as cave paintings, Jericho skulls, the Sumerians, Egyptian writing, the Greeks, the Romans and people living in the Renaissance. Sadly some paintings did not survive but enough are here so we can know how our ancestors lived, where they were in time and what they had. All together, minerals are very important in paintings.

Around 31,000 BC, Paleolithic man invented a beautiful thing...painting. Paleolithic comes from two Greek words, *palaeos* meaning old and *lithos* meaning stone. These are some caves with cave art in France: *Lascaux*, *Chauvet*, *Le Ruth*, *Le Cellier*, *Niaux*, *La Grotte de la Vache*, *La Madeleine*, *L'Abri Poisson*. No one knows why they made paintings, but some ideas are; hunting magic, religion, adult hood ceremonies and memories.

Paleolithic man painted animals whose qualities they admired, not the ones they ate. We know this because we found different animal bones than the ones on the cave walls. They may have signed their work with handprints. There were also symbols such as dots, zigzags, circles, rectangles, grids and many other shapes, and occasionally humans. The artists would use pads of fur, their fingers, and brushes to apply the paint.

Paleolithic man crushed minerals to make paint. They used charcoal from their fires to make black, earth for brown and yellow and rust for red. They would crush the minerals into a fine powder called pigment. How did they get from powder to paint? Add a liquid! To find out what liquid they used one scientist did 205 experiments to see what was best to make powder into prehistoric paint. The answer, cave water! Cave water was used because it dissolved the calcium on the cave walls, floor and ceiling.

One of the most amazing things these people made was a calendar. The main thing for their calendar is thirteen dots that represented the lunar months. Some had an animal or twenty eight dots. These represented how many days were in each month. Cave paintings aren't baby art work. Paleolithic artists made beautiful paintings. These paintings were well placed so we can see them today.

Neolithic man used minerals in their paint pigments. Jericho, the oldest known city, existed from 8,500-7,500 BC. The people there used minerals in an odd way. They would cover their ancestors' skulls in plaster and paint on detail, like hair even mustaches. They would use cinnabar for red and bitumen for black.

In nearby civilizations such as Catalhoyuk, people would paint right on the skull. Surprisingly, they would do this only on female skulls; all of the skulls are found in shrines. Sometimes we find skulls painted with malachite for green and azurite for blue.

In Mesopotamia, Sumer became a civilization around 3,5000 BC. Sumerians were the first people in Mesopotamia and the first in Mesopotamia to be painting with minerals. They would paint for religious beliefs. They would crush cobalt for blue, copper for green, lead for yellow, charcoal for black and gypsum for white. They were the first to paint animals in their natural habitat. The Sumerians' paint was very vibrant. The Sumerians would mix their paints with cedar oil.

In Egypt, which started in 3,200 BC, Egyptians made paint out of W minerals. Their paintings were their writing called hieroglyphics. They would take a reed called papyrus for paper. To make paint they would crush azurite for blue, malachite for green, ochre for red and yellow, charcoal for black and reeds for white. Egyptians also made makeup to keep flies and the sun away. Some minerals for makeup were poisons.

In Greece, which started around 1100 BC, Greeks were painting shapes. They started painting animals and humans around 800 BC. They ground charcoal for black, lapis lazuli for dark blue, pyrite for yellow, cinnabar for red, malachite for green and azurite for light blue. The Greeks invented a new way of making paint using egg and wax. We have evidence the Greeks painted their statues.

No major changes were made in paint making until the Renaissance. During the Renaissance Jan Van Eyck invented a new way of making paint. He mixed the minerals with oil instead of mixing the minerals with egg and water. Earlier civilizations had used oil but it was slow drying. Jan Van Eyck used linseed oil mixed with ground up glass and bones, with the pigments. One eager artist, Leonardo Da Vinci made an experiment. He painted with oil and tempera paint in the *The Last Supper*, but oil and water don't mix, so the painting must constantly be repaired. They would crush azurite for blue, arsenic for yellow, malachite for green, umber for brown, gypsum for white and charcoal for black.

We can tell art is very important to people because the paint brush, paint, crayon and kiln were all invented before the wheel! Art has been a way to write before writing. We would have no painting without minerals and these paintings give us messages about our ancestors. It is amazing to think of all the things art has brought to humans. We still use minerals in art to day but most are man made.

By Dorsey Catherine. Winchester