

Ochre history

For millennia, humans have beautified their world and expressed their thoughts by painting. Over the years, paintings have been made on virtually every imaginable surface.

The common characteristic is that paint consists of ground up pigment in some sort of liquid. When the liquid dries into a film, the ground pigment is stuck to the painting surface. The first paintings were cave paintings, such as those pictured at right. Ancient peoples would decorate walls of protected caves with paint made from dirt or charcoal mixed with spit or animal fat. In cave paintings, the pigments (often carbon black or ochre) stick to the wall partially because the pigment gets trapped in the porous wall, and partially because the binding media (the spit or fat) dries, adhering the pigment to the wall.

Over the years, countless graves unearthed by archaeologists exposed bodies covered in red pigment or chunks of pigment buried alongside bodies. Red, associated with blood, the most life-sustaining of a bodily fluids. Was the appropriate color to symbolize life's meaning and end. The word hematite (the source of many iron oxide pigments) is derived from the Greek word, hema meaning blood.

Prehistory

Prehistoric dwellers may have discovered that unlike the dye colors derived from animal and vegetable sources, the color that came from iron oxide deposits in the earth would not fade with the changing environment. For this reason, it is estimated that men traveled long and far to maintain a steady supply of red pigment. In every locality where prehistoric sites were discovered, from Texas to South Africa, trails lead to near and far hematite deposits where man mined. It has even been deduced that the impetus behind all mining activities was sparked by prehistoric man's need for red pigment.

Combining their expertise, art historians and conservators used examination, chemical analysis and ethnographical (cross-cultural) comparison to hypothetically reconstruct the artistic materials and techniques of the cave dweller. It is assumed that all the colors used by Paleolithic artists have a foundation of mineral oxide (either iron or manganese) or carbon. Their limited palette was produced from three basic colors: red, black and yellow. Reds, yellows, and browns came from the limonite and hematite (ochre and sienna), where a range from reddish brown to straw color is evident in the paintings. Shades of red-violet and mauve were perhaps the product of natural

peroxide of iron transformed slowly and naturally into violet oxide. Blacks were derived from manganese ores and charcoal.

Excavations in the Lascaux area prompted speculation that cave dwellers traveled as far as 25 miles to obtain iron oxide pigments. The oxides of iron dug right out of the ground in the form of lumps were presumably rich in clay. This consistency was conducive to the formation of crayon sticks and also could be made into a liquid paste more closely resembling paint. It is believed the lumps were ground into a fine powder on the cave's natural stone hollows where stains were observed. Shoulder and other bones of large animals, stained with color, were discovered in the caves and presumed to be used as mortars for pigment grinding. The pigment was made into a paste with various binders, including water, vegetable juices, urine, animal fat, bone marrow, blood and albumen.

Historians hypothesize that paint was applied by brushing, smearing, dabbing and spraying techniques. Large areas were covered with fingertips or pads of lichen or moss. Twigs produced drawn or linear marks, while feathers blended areas of color. Brushes made from horse hair were used for paint application and outlining. Paint spraying, accomplished by blowing paint through hollow bones, yielded a finely grained distribution of pigment, like airbrush.

Iron oxide pigments constituted the basic palette of ancient artisans, from Egypt to India and China. The Minoans, attributed with inventing the fresco, mixed their pigments with water and applied them to a fresh lime surface. The technique, called buon fresco, requires pigments that bond permanently to lime. Iron oxide pigments, unaffected by alkalis, remain the basic palette of fresco painters, from the Minoans to the present.

Middle Ages and the Renaissance

Throughout the Middle Ages and the Renaissance, mineral pigments (including those from iron oxide) continued to be used by painters. Available since antiquity, medieval Italian painters used terra verde for under painting middle and shadow flesh tones. Its commonly used synonym, Verona Green, comes from terra verde's prevalence in the area around Verona, Italy. Those deposits were exhausted in the late 1930s. Small amounts also came from Cyprus. Terra verde is rarely found today, however, and viridian or chromium oxide yield similar color ranges.

Like the Paleolithic cave dwellers, late medieval and Renaissance artists used natural chalks made from mineral pigments. Dug right out of the earth and shaped into sticks with knives, these chalks were ready for drawing. Natural red chalks, with their rich, warm color, were popular from about 1500 to 1900. Such artists as Michelangelo,

Rembrandt and Antoine Watteau used this medium to produce some of the most coveted drawings in the world today.

Recent centuries

By the 18th century, synthetic red iron oxide pigments were being made in a laboratory setting. Called Mars Red, these pigments were found to have all the properties, including durability and permanence, of their natural counterparts. By the middle of the 19th century, regular manufacture of synthetic red iron oxide pigments began and has continued to be improved and simplified up to the present. Synthetic yellow iron oxide pigments (Mars Yellow) have been made since the early 1920s, with major improvements occurring in the 60s and continuing to the present. The development of synthetic brown iron oxide pigments has evolved through modification of the technology used in producing reds and yellows.

Today, synthetic iron oxide pigments are used extensively by the paint, plastics and other industries. Often these manufacturers use blends of (low cost) natural and (high quality) synthetic iron oxides to produce the best results.

TYPES OF PIGMENTS

NATURAL

SYNTHETIC

Mineral Pigment

Organic Pigment

OXYDE

NATURAL EARTH

ANIMAL

VEGETAL

IRON COBALT ZINC TITANIUM

OCHRE



PAINTING: METHODS AND MATERIALS OF ANCIENT MASTERS:

Egg Tempera:

The traditional egg tempera technique as practiced by renaissance master painters such as Botticelli, Fra Angelico and Piero de la Francesca was using in the preparation of traditional pigments extracted from semi-precious rocks, earth and plants using washing and grinding processes. Once purified, these colors are then made into tempera paint using the yolk of egg. The classical method of painting in egg tempera is a discipline that requires a careful structuring of the paint layers from the ground upwards; beginning with a tonal under painting followed by many layers of colored glazes. The technique of egg tempera is 7,000 years old or more and has proved itself to be one of the most stable and subtle of all paint mediums as displayed in the works of renaissance masters of the 12th, 13th and 14th centuries.

The Mix Technique of Egg and Oil

During the late XV century when artists were just beginning to paint in oil, a method developed in northern Europe (of which Van Eyck was the father) of combining egg tempera and oil in a mixed technique. Paintings done in this method had a richness of colors and luminosity that is unequalled in art since. The paintings are amongst the most well-preserved since oil painting began.



Renaissance Oil Painting Recipes and Techniques

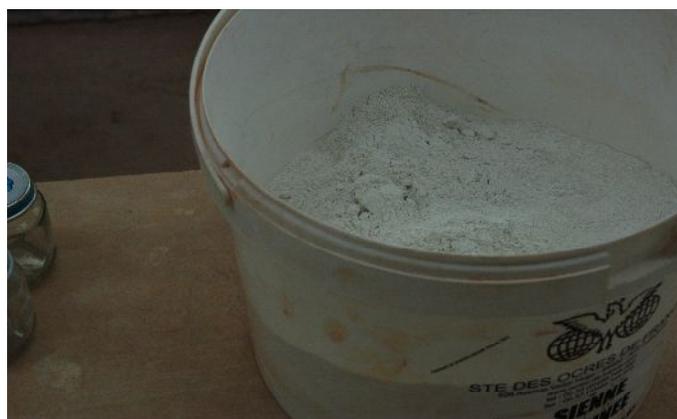
Artists of the renaissance had a thorough training in their craft; this is expressed through the systematic and intricate structuring of the paint layers. Beginning with a colored ground, a carefully developed under painting was developed over which fine glazes of color were developed in separate layers. The method of these masters resulted in paintings where the light emanated from within the paint layers, giving to the painting a profound game of light and dark.



HOW TO MAKE A FRESCO



- 1- Mixed the selected pigment with water.
1st. coat: 1 volume of powder for 2 volume of water
2nd. Coat: 1 volume of water for 1 volume of powder



- 2- Mixed Hydrated lime white wash. We used BADISOF.



- 3- Mixed BADISOF until it look like a paste



- 4- Included the pigment.



- 5- Prepare the wall with water.



- 6- Throw the BADISOF strongly on the wall.

HOW TO MAKE A FRESCO



7- Spread out BADISOF.



8- Try to remove irregularity.



9- Try to get a very smooth surface.



10- Then used a sponge for humidify the surface.



11- Add some pigment on the surface 'when it is fresh, in Italian means "Fresco") so we have to work when the surface Have humidity. We can add pigment and make your draw.



12- Pigment should be press on the surface.