# Natural Pigment Painting

A natural pigment is one that is found in nature that is ground, sifted, washed, and in rarer cases, heated to create a desired hue.

Since their inception, natural pigments served many artistic purposes for ancient cultures around the world. Natural Pigments/Dyes can be sorted into three categories

- 1. Natural pigments obtained from plants
- 1. Natural pigments obtained from animals
- 1. Natural pigments obtained from minerals.

Natural Pigments/Dyes that don't require mordants are called "substantive dyes."

However, many dyes require a mordant, an element that combines with a dye and the fiber so that the dye is absorbed. These dyes are referred to as "adjective dyes."

\*A couple common mordants include iron and tin.

# **Natural Pigment Sources and** Their Commonly Derived Colors

## MINERALS

Azurite



- Chrome yellow
- Cobalt



**Red Ochre** 

## PLANTS





Indigo



Madder



### ANIMALS





Cochineal



Indian Yellow



Sepia







Natural pigments offer tremendous versatility and accessibility; vibrant colors can be made using resources right from your backyard.

Plants, roots, nuts, fruits, vegetables, and flowers of all different types each generate a unique color when applied correctly



Pigments that come from minerals are found in rocks and soil all over the world.

**Different minerals** produce their own unique, often vivid, colors. Many are even roasted to intensify the color.



There are fewer examples of dyes obtained from animals than those retrieved from plants and minerals.

However, many colors were extracted from insects throughout history.

### **Extraction of Natural Pigments**

### **Materials**

- 1. Fruits, Three Leaves and Flowers
- 2. Mortar and Pestle
- 3. Acetone, Ethanol and Water as Solvents
- 4. Filters and Filter Paper
- 5. Beakers

#### **Procedures**

- 1. Obtain a mortar and pestle and choose a plant for your **extraction**.
- 1. Add the plant to the mortar and then crush your plant in the mortar with the pestle.
- 1. Crush as much as you can and then add the solvent (Water, Acetone and or Ethanol).
- 1. Filter the **extract** to remove all non-soluble plant material.
- 1. Leave the beaker in the hood to evaporate the Water/Acetone/Ethanol.
- 1. After the acetone evaporation add just the enough acetone to the beaker until have a high concentrated solution.
- 1. Use the TLC and or the Paper chromatography to separate those pigments using the best solvent as a mobile phase.



## Natural Plant Pigments



### Did You Know...



One of the earliest recorded applications of natural bigments dates back to 5000 B.C. at the Cave of Hands, in Argentina.



Scientists found traces of alizarin, a red pigment extracted from madder plants, in the tomb of 18th dynasty pharaoh, King Tutankhamun, in Egypt.

Popular rich, brown pigment known as "mummy brown" was made from the flesh of Egyptian mummies.

More than 250,000 shellfish were needed to extract just half an ounce of "royal purple" dye.

#### DIY Projects Using Natural Pigments





- Add a small amount of flour to thicken.
- 7. Begin painting your landscape.

#### Helpful Tips

- For a green color, let spinach leaves steep to extract a hunter green hue.
- To create yellow, add tumeric or ginger.

3. Strain the mashed fruit

through colander.

4. Mash one more time.

- If the paint is too thick, add water to adjust to your desired thickness.
- Add a variety of colors to create depth within your landscape.





#### DYE FABRIC Items Needed





Plants of choice

Fabric of choice.

4 cuns of cold water

#### Instructions

- 1. Mix vinegar and water.
- 2. Place fabric in mixture for 1 hour.
- 3. Rinse with water.
- 4. Cover plants with water in a pot.

- 5, Simmer for 1-2 hours.
- 6. Strain plants.
- 7. Add fabric to the water.
- 8. Simmer for an hour.
- 9. Wash fabric in cold water.



#### STAIN WOOD

Items Needed











Pure earth pigment

Walmit oil

Rag

Instructions

- 1. Mix I part pigment to 4 ports ail.
- 2. Combine 1 tosp. of pigment with I cup of water.
- 3. Bail on high heat until the mixture is thick.
- 4. Let cool for a couple hours.
- 5. Rub stain into wood using a cotton cloth,
- 6. Let each coat dry before starting the next.

#### Helpful Tips

- · Paint several times, letting the wood dry in between.
- Softwoords are the most absorbent.

- Use a sealer to prevent the color from transferring.
- Wear rubber gloves to avoid staining your hands.

#### invaluable





1 cup



Natural Berry Pigments



Left to Right: Instant Coffee, blueberries, raspberry, blackberry, pickled onion, pickled beet, turmeric, tea, paprika, all of the pigments mixed in a palette



Come up with your own ideas and experiment. Remember that failure only proves you tried something new. I tried to use blueberries and the color is a gross green-brown! I would try cooking the berries in some water in the future. Trial and error!













## Fall Leaf Science Exploring Colors & Chlorophyll







### Resources

https://www.invaluable.com/blog/natural-pigments/

https://www.invaluable.com/blog/natural-pigments/

<u>ttps://www.miriamfigueras.com/blog/2017/9/15/experimenting-with-turmeric-and-other-natural-pig</u> <u>ments</u>

https://www.saatchiart.com/print/Painting-Coffee-and-Turmeric-painting-Shudh-Pushp/593840/28 40242/view

http://brigideda.com/blogs/2013/10/8/tumeric

https://theimaginationtree.com/homemade-natural-colouring/

https://artful-kids.com/2010/09/08/experimenting-with-natural-paints/