

# Dyeing Textiles with Cochineal

## Lab Guide for Students

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Adapted from chapter 5, "Recipes," of Jo Kirby et al, *Natural Colorants for Dyeing and Lake Pigments: Practical Recipes and their Historical Sources* (Archetype, London, 2014).

## MATERIALS

- Dyestuff (cochineal)
- mordant (alum)
- Mortar and pestle
- Coffee filter
- Water
- Textile - 25 g cotton bandana
- Thermometer
- Stirring stick
- Plate

### Ratios of Materials

Textile (weight of fiber - WOF) : mordant (alum) : water

1g : 0.2g : 50g

Textile : cochineal : water

1 : 1.25g : 62.5g

## PROCEDURE

### Mordant bath

- Measure out water into pot
- Add alum and stir
- Place beaker onto hot plate and turn on to medium-low
- Stir to dissolve alum in the water
- Pre-wet textiles with water and wring them out to remove water

- Add textiles when alum solution reaches 70° C
- Heat the textiles for 20 minutes at 80-90° C, stirring occasionally to ensure homogenous absorption
- Remove textiles, then rinse them thoroughly in cold water

#### Extract Dye From Cochineal

- Using mortar and pestle, crush dyestuffs to a fine powder or into small pieces
- Measure out water and pour into pot
- Add dyestuffs to drawstring bag, close tightly, add bag to water
- Place pot on stove, at medium-low
- Heat the bath (without the textiles) at 80-90 °C for 20 minutes, stirring occasionally
- After 30 minutes, remove dyestuffs in drawstring bag

#### Dye Textiles

- Add textiles to the dye bath (it is usually best to pre-wet textiles with water before adding)
- Heat textiles at 80-90 °C for 20 min, stirring occasionally to ensure homogeneous dyeing
- After 20 minutes, remove the textiles from the bath
- Being careful not to damage (or, if using wool, to felt the textile), wash textiles with clean water to remove any dye that has not bound to them
- When the water runs clear over the textiles and no color comes off the textiles, wring out excess water
- Lay out the textiles to dry

## Reflection

On a separate piece of paper, write a paragraph about the experience using one of the guiding questions below:

- *How can we connect art, science, and nature through sustainable practices?*
- *What is the value in reconstructing historical procedures?*
- *What is the importance of understanding where materials come from?*
- *What went differently than expected? How did you react to these situations?*