



Protecting Your Family Heirlooms

By Angela M. Rayne

My family is getting on in years. As such, they have begun to pass things along that they deem important to preserving the family history. They also have decided that I should be the official keeper of family heirlooms. Sound familiar? I thought so. Now just how do you decide on the best care for such precious antiques?

At the Hiwan Homestead Museum, as with most museums, artifacts (heirlooms) are cared for by a collections manager or a curator, which happens to be me. But at home, you are the conservator and deciding on the best care may often be a mystery. I would like to help. I should begin by saying that

enjoying family heirlooms and preserving them is always a balancing act. For fragile objects like crystal or clothing, the tradeoffs are easy to see – the more you handle them the greater the risk. But exposing almost any heirloom to everyday changes in light, heat and humidity will eventually cause damage. The advice offered in this article should help you decide where to draw the line.

There are five enemies of your heirloom: light, temperature, relative humidity, air borne pollutants, and pests.

LIGHT

Colorado boasts of having over 300 days of sunshine per year. While this is great for you and me,

it is terrible for your heirlooms. Light can permanently damage paintings, photographs, paper, and especially textiles. Typical symptoms of light damage include fading of colors, yellowing of varnish, bleaching of paper, and fading and weakening of textiles. However, good lighting is necessary to see your heirlooms, so a balance must be achieved between the need to see and the need to avoid damage. Remember, you are the one responsible for preserving the family history and passing the heirlooms along.

Methods for Controlling Light

Ultraviolet light (UV) is the most energetic form of radiation. It causes sunburn not only in humans, but on heirlooms too.

Therefore, it is important to eliminate ultraviolet radiation entirely. This can be accomplished by the use of a UV filter placed either on the source of light or in front of the heirloom.

Infrared light (IR) causes damage by heating up the surface of an heirloom. The primary method of minimizing heat buildup is to avoid direct light. This can be accomplished by using a plastic film on windows and by moving lamps away from heirlooms.

Sunlight and fluorescent lamps also cause damage similar to UV. The key to minimizing damage from visible light is to use warm fluorescent lamps and to use light in an efficient manner. Turn the lights off when not viewing the heirloom, reduce the amount of daylight in the room, and rotate light sensitive items.

TEMPERATURE

Changes in temperature as little as 10 to 20 degrees can affect the stability of an heirloom. Temperature causes objects to expand and contract. Think about a thermometer. The mercury expands as the temperature rises and contracts as the temperature lowers. This same process acts on your family heirlooms. Some art materials can soften and actually flow at a temperature of 100 degrees Fahrenheit. Objects that have multiple layers of different material, such as pottery, are subject to cracking. The different materials move at different rates with changes in temperature, which causes cracks. Temperature is also important in the way that it affects relative humidity.

Methods for Controlling Temperature

Central heat and air conditioning with a filtration system are critical in stabilizing heirlooms. Remember, what you are striving for is stability; changes of less than 10 degrees. Ideally the temperature range should be 66 to 70 degrees. Heirlooms stored in basements and attics should be monitored



with thermometers independent of the system's thermostats, to assure that the system is capable of reaching these locations too.

THE RELATIVE-HUMIDITY PROBLEM

People notice "relatively" small changes in temperature, but rarely notice even large changes in humidity (commonly noted as RH). Therefore, residential and office spaces are controlled to maintain a comfort range without consideration

for humidity. The dimensional stability of objects is just the opposite. While large changes in temperature have little direct dimensional effect, small changes in relative humidity can cause a significant change in dimension of an object. So, the control of relative humidity should be a primary concern, considering humidity's effect on family heirlooms.

Humidity refers to water vapor in the air. Air can hold more moisture higher temperature than at a one. Absolute humidity refers to the actual amount of water in air; independent of temperature. Relative humidity is based on the percentage of water vapor in air, compared to what air can hold at 100 percent at a given temperature. Thus, materials will expand as their moisture content increases in direct response to an increase in relative humidity.

Controlling Humidity

Here in the West, high humidity is usually not a problem. Ideally you should try to keep RH within a range of 30 to 60 percent. However, it is important to choose a range based on what is practical to maintain given conditions within our geographical region and the limitations of humidification control within your dwelling. The important thing to remember is to minimize fluctuations by choosing a realistic RH range.

The simplest solution is to add a humidifier to the central ductwork of a forced-air-heating unit or use a freestanding humidifier. An alternative approach is to create a microclimate that is capable of providing an environment different from that of the surrounding space. This approach, however, requires specific

knowledge and skill, and a conservator should be consulted before construction.

PARTICULATE POLLUTION

Within a normal residential environment, it is very difficult (and expensive) to control airborne pollutants. Accumulation of oily soot on surfaces and formation of tarnish on silver are two examples, all too familiar to everyone. However, particulate pollution comes in a variety of sizes and forms. It can be generated within the household or brought in from the outdoors. Regular vacuuming best controls pollutants from fibers such as carpet, clothing, etc. Other forms from smoke and kitchen

cooking are especially dangerous because they tend to be greasy and difficult to remove. Try to minimize smoke and cooking by venting the areas or limiting the number of heirlooms in areas prone to this type of exposure.

Dust

Dust from the outdoors can be minimized by filtering outdoor air. Unfortunately, most filters used on residential air conditioners and heating systems only remove large particles. Because high-efficiency filters impede the passage of air, the fans in these units may be too weak to push air through a fine-grade filter. A local contractor should provide information about the possibilities for increasing filtration efficiency. For residential purposes, a grade of filtration around 65 to 85 percent Dust Spot Efficiency provides a reasonable level of protection.

Gaseous Pollutants

Gaseous pollutants are generated from indoor sources such as fresh carpeting and new paint. Often materials used in furniture making may give off acidic gases that can cause



corrosion and deterioration. One notorious example is oak. Various types of metal, especially those containing lead, have seriously corroded as a result of exposure to the acid fumes given off by oak. Outdoor gaseous pollutants are difficult to filter using residential systems. Most air filters are made to filter particulate pollutants, not gaseous pollutants. Therefore, the best strategy is again to reduce the amount of outside air.

PESTS

The average household is beset by a wide variety of pests, ranging from small insects to rodents. And, of course, you can't avoid foodstuff in the house like we can at the Museum. Protection against pest problems requires constant vigilance, careful monitoring and good housekeeping. Unfortunately, many objects are constructed of organic materials that serve as food source for a wide variety of pests. Excellent housekeeping is the best defense here, along with keeping pet food on the balcony or in the garage and checking newly purchased treasures before bringing them into your home.

Elimination

The only way to truly

protect heirlooms is to eliminate current pest populations and to prevent re-infestation. Elimination can be a difficult problem because the method of extermination itself may cause damage. For example, many sprays contain solvents that can blister paint if directed on the object. Fumigation also is a choice but should be done by qualified personnel. And, if the extermination procedure requires direct handling of the object, a conservator should be consulted for advice on the safest approach.

Prevention

The best method, of course, is to prevent infiltration in the first place. This approach emphasizes two activities; monitoring for the presence of pests, and closing off points of access. Monitoring requires careful and regular inspection of the heirloom. Make

note of any evidence of activity using sticky traps that provides visible evidence of insect activity. Closing off points of access requires careful detective work. It is necessary to determine where the pests are hiding within the house in order to assure total elimination. It is also important to know how the pests entered the house in order to figure out how to deny them future access.

SIX SIMPLE STEPS TO REMEMBER

1. **Display or store your heirlooms in a stable, clean environment.** Temperature of 72 or lower, humidity between 45 and 55 percent and try to avoid dramatic changes.
2. **Location, location, location.** Display and store your heirlooms away from heat sources, outside walls, basements and attics.
3. **Shun the sun.** Light fades and discolors most treasures and is especially dangerous to fabrics and paper.
4. **Check for signs of pests.** Holes in furniture or textiles, wood shavings and any droppings.
5. **Heirlooms can be harmed by:** abrasive cleaners; dry-cleaner's bags; glues, adhesive taps and labels; pins and paper clips; acidic wood, cardboard or paper; and pens and markers.
6. **Even if it is broken, don't fix it!** A smudged painting, torn photograph or broken vase may seem easy to fix. They aren't. Well-intended but amateur repairs usually do more harm than good. See a conservator.

SAFE MATERIALS FOR THE DISPLAY AND STORAGE OF HEIRLOOMS

The types of materials that come into contact with your heirlooms is the next area of discussion. Only "stable" or "safe" materials should touch heirlooms. The



terms stable and safe usually refer to the acid content in materials. Acid is found naturally in many kinds of paper and wood. It is acid that makes newspapers yellow and brittle so quickly. Only acid-free products and certain plastics are recommended for display and storage because they will not harm your family heirlooms. Acid-free materials may be buffered to help counteract the effects of acids. Buffered materials are safe for most heirlooms, but unbuffered materials may be used for blueprints, photographs, fabrics, or any organic materials. Several kinds of plastics are useful in preserving your heirlooms. Polyethylene, polypropylene, polyester,

polycarbonate and acrylic products are all stable materials that can help protect your heirlooms.

PRESERVING YOUR PAST

The last thing to consider is documenting your heirloom. This written information is the memory of the heirloom. Long after you and yours have come and gone, the records of the heirloom will speak for you. Make sure to identify, photograph and maintain records of your heirlooms. Describe the history and condition of each object; note who made, purchased or used it; and tell what it means to your family. Always try to identify individuals in a family photograph and the time and place it was taken. You will find that getting the details down on paper is rewarding in itself. It also may suggest how your family history fits into the larger story of the community and nation.

The best advice I can give is, "When in doubt, consult a conservator." Sometimes there is no substitute for expert help. Professional conservators understand what causes the deterioration of many different materials, and how to slow or prevent it. They master their subject through years of apprenticeship, university programs, or both, and usually have a specialty, such as paintings or textiles.

Know that by taking care of your family's precious heirlooms, you give three gifts to your descendants: the treasures themselves, your dedication in preserving them and a richer understanding of your family's history for decades to come.