

## ENVIRONMENT AND ITS EFFECTS ON WOODEN ARTEFACTS

One of the first considerations of must be taken into account when providing care for any furniture collection is environment in which the collection is kept.

Environment can and devastating effects and antique furniture more so than any other type of artefact. This is mainly due to the materials from which furniture is the constructed from. This is a variety of permeable and perishable raw materials most of them organic substances, each reacting with its environment in a unique way

Wood expands on contracts as the moisture content (relative humidity) the surrounding area changes. This expansion and contraction characteristic of timber fuels the misconception concerning the “breathing of wood”.

Timber absorbs moisture as the humidity in the air increases and releases moisture as the humidity level drops.

These fluctuations in and moisture content result only in accelerating the decomposition of the material.

Such environmental factors can also nullify conservation or restoration repair work. Irrespective of how well repairs to furniture are executed environmental elements that are not controlled can take a terrible toll on any wooden artefact.

This is especially true of furniture containing wooden inlays, veneer, and finishing work.

The author has seen as happen many times the conservator completes his repair work on a piece of furniture and returns it to its permanent home, where there are few or no environmental controls, and piece once again develops identical problems which necessitated the original intervention.

### HUMIDITY AND TEMPERATURE

Ideally furniture should be stored in a stable environment where both humidity and temperature can be rigidly controlled. The atmosphere surrounding wooden artefacts should ideally be 50% relative humidity + or-5 per cent and the temperature of 68 degrees Fahrenheit to + or-5 degrees.

Relative humidity is determined by comparing the amount of moisture present in the air of a given environment, to the maximum amount of moisture the air could hold at the same temperature.

Relative humidity expressed as a percentage indicates the amount moisture in the air at a given time and temperature

Humidity above 70 per cent is high, and furniture in such an environment can develop swelling of materials, softening of adhesive, cleavage of inlay, veneer, paint, or lacquer, of mould growth, corrosion of metallic elements and blooming on surface finishes.

Furniture housed in an environment where humidity is below 30 per cent can suffer shrinkage of materials, embrittlement of adhesive, cleavage or cracking of inlay, veneer, paint, or lacquer, loosening of joints and screws and surface de-hydration.

A humidity meter can be purchased (from a garden centre) for a few pounds, and is the first environmental check in this age of "central heating".

## LIGHT

All types of light cause cumulative damage to organic materials, and it should be remembered, that a low light level over a long period of time can cause as much damage as a high light level for a short period of time.

Sunlight contains ultraviolet and infrared light levels that cause deterioration in materials used in furniture construction, especially surface finishes.

An easy way to minimise the effects of sunlight is to close curtains and blinds on sunny days, and to place your antiques well away from windows.

Light levels for furniture and paintings and most other artefacts except those made of metal or stone should not exceed 150 lux. For very sensitive materials such as textiles and paper light levels should be even lower, around 50 lux

Windows may be fitted with ultraviolet shields made of a acrylic plastic. These are available from plastic suppliers and can be cut to size and fitted inside the frame. Also 3M manufacture a thin self-adhesive film which can be applied inside an existing window.

## MOLD

Mould on the back underneath of your furniture is usually an indication of too high a relative humidity usually coupled with the poor air circulation. Like germs, mold spores are present almost everywhere and are just waiting at the right conditions in order to multiply.

The first step in the eradication of molds is to take steps to reduce the humidity and increase air circulation around the artefact. Any loose mould should be brushed up of and a proprietary mold killer used to treat the attack. Do not attempt to wash off the mold using water, as you will be simply feeding the organism and worsening the problem.