

CLEANING METHOD OF PAPER MANUSCRIPTS

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Dirt on an object can be a point source of deterioration on a paper object. Cleaning is a necessary preliminary to a future treatment of a paper manuscripts as well as when preparing the paper surface before giving it a protective coating or joining pieces of papers during restoration. It is very important for the conservator to judge and decide what should be the final appearance of an object after cleaning and how much dirt has to be kept on the object to retain the patina of the object. Dirt can be classified into two categories.

1. **Foreign Matter:** particles of dirt which is not the part of original document but has later on got deposited on the surface of the paper. For example, soot, grease, adhesive and filling from old repair. Sometimes stains are present into the paper fibers for example, oil, blood, rust, fungus, stain etc. it is very important that some stains in very rare manuscripts is rather desirable to be preserved on the paper surface than to clean it.
2. **Product of Alteration:** Sometimes on the surface of the paper there is a layer of surface formed through a chemical reaction of the original material of the paper surface with the atmosphere (environmental gases or salts).

Cleaning of paper manuscripts:

A conservator needs to be able to remove materials from the surface of the original paper document that is in a wrong place without causing any damage to the original document. Therefore cleaning a the paper object, proper examination of pH, solubility of the ink and the colour of the paper has to be made sure.

The cleaning processes that has to be adopted on a paper object always depends of the present condition of the paper has made sure.

The cleaning processes that has to be adopted on a paper object always depends of the present condition of the paper. The following aspects has always to be considered by a conservator before cleaning.

- a) Why the object has to be cleaned?
- b) It is dirt that has got deposited on the surface of the paper?
- c) Should some or all of it remain?
- d) The object that has to be cleaned, can it tolerate the treatment?
- e) What are the properties of the object as well as the dirt?
- f) What will be the effect of cleaning?
- g) What will be the appearance of the object after cleaning?
- h) Will the stability of the object be affected after cleaning?
- i) How often the object will require cleaning in future?
- j) How can you clean the object?
- k) Is the cleaning method decided will be suitable for the object?
- l) How does the treatment work?
- m) Is the treatment safe for both the object as well as the object?
- n) When do you stop cleaning?

TYPES OF CLEANING

1. MECHANICAL CLEANING: The foreign matters or deposits presents on the paper are to be mechanically removed in this method. This can be done by three means.

- a) **Dry Brushing:** Dust does not cohere to itself neither adhere very strongly to the object. It can therefore easily remove with a soft brush or a feather duster. A blower brush of a vacuum cleaner can be a very good duster but one should be very careful while using it. Soft cotton pad can be used for removing fungus spore on the paper but the pressure should be very light on the paper.
- b) **Picking Method for Removing Solid Layers:** With the help of needless and forceps without causing damage to the surface of the paper, thick solid deposits of resin, insect excreta, wax and metallic grains can be removed. By picking it which is giving a little pressure by

the tip of the metallic needle at the centre of the solid layer results in the cleavage of the layer and ultimately removal of the solid layer from the surface of the paper.

- c) **Eraser Cleaning:** In this type of cleaning it is necessary to establish that what type of eraser and how much pressure used on the paper during cleaning. On very fibrous or porous paper, erasing could be harmful. The selected eraser should be soft, smooth and free from dirt.

Incrustations like splashes of fly marks, wax or lac seals etc which are adhering to the paper can be carefully dislodged and removed with the help of a sharp needle or a fine scalpel. This operation could be undertaken with utmost concentration, preferably with a magnifying glass or under a binocular microscope, so that the adjoining surface of the paper does not get disturbed.

AQUEOUS CLEANING

Paper objects that are having insoluble ink on their surface can be cleaned by a simple washing with water either by careful immersion or by spraying technique. Too much brittle objects can be treated by keeping them over wet pad of blotting papers.

Water is used to remove water stains or for softening certain hard incrustations. Distilled or deionized water tend to dissolve out salts of calcium present in paper in the presence of which gives it a certain degree of protection. Tap water contains certain quantity of impurities like chlorine and iron compounds which can induce oxidation of cellulose of paper.

This particular cleaning technique cannot be administered without testing the solubility of ink or colours if present on the entire paper surface. Sometimes soluble inks also become too much stable when they remain on the paper for quite a long time and thus a proper testing is very much recommended before deciding about the insolubility of the colours or ink.

SOLVENT CLEANING

If the stains on a paper surface have got absorbed into the fibres of the paper and do not have a significant thickness, mechanical cleaning cannot help in that case. In such case some suitable solvent can be introduced for dissolving or softening the stain. The choice of stain depends

upon the nature of stain. The entire process of solvent cleaning is based upon the concept of first softening or dissolving the stain followed by absorbing the stain on a surface of blotting paper in order to avoid the spreading of ink. The process can be accelerated by the use of low pressure suction table or a suction probe for this purpose.

Solvents used for solvent cleaning

Acetone

Toluene

Ethanol

Iso propyl alcohol

Methanol

Trichloroethylene

Hydrogen peroxide

Triethylamine

Carbon tetra chloride etc.
