The Practice of Sizing in Middle-Eastern Paper Manufacture and its Relation to the Conservation of Islamic Manuscripts.

Abstract presented by Helen Loveday

The practice of sizing, by which a sheet of paper is strengthened and made impervious to ink, has a history of use dating back to early Chinese papermaking, where the earliest methods of sizing involved covering the surface of sheets with a thin coating of gypsum or gum tragacanth. Later, a rice-based starch was used, obtained through straining boiled rice through a piece of clean linen, and collecting the starch-filled water beneath. In the Islamic world, solutions of rice and wheat starch were popular forms of sizing from the 8th century AD onwards; the solutions could brushed onto both sides of the formed sheet, or alternatively the whole sheet could be dipped into a tub of size, giving the paper an inherent strength and durability, and an evenness of size distribution throughout.

In order to produce a smooth and glossy surface, the sized sheet was burnished with one of a number of implements, the most widely mentioned being agate and onyx. These twin processes of sizing and burnishing rendered the finished sheet relatively impervious to ink, and suitable for use as a writing material, such that text, illumination or illustration were prevented from sinking too far into the fibre network.

Although it is unwise to classify papers solely according to how they were sized, trends in the practice can be identified. Generally speaking, the amount of size applied to a sheet of paper increases from century to century, with the earliest papers being notably softer to the touch than their later counterparts. This tendency to apply increasing amounts of starch to the paper is noteworthy not only from century to century, but also from region to region: from the fifteenth century onwards, there is a clear distinction between papers produced in Egypt and Syria, as opposed to Persia and Central Asia – with the more easterly regions favouring a more heavily sized and burnished sheet.

The manner by which a paper has been sized and burnished directly influences how it is preserved and later conserved. But herein lies a certain paradox: the twin processes certainly imparted strength to the sheets to which they were applied, and the survival of manuscripts and works of art on paper from the 15th century onwards has no doubt been promoted in part by the addition of a sizing medium to the fibre network. But too much size on a paper's surface can hinder its conservation: unable to penetrate through the sizing layer to the fibre network beneath, pigments and illumination rest on the burnished surface, and move with speed in the presence of any moisture brought into contact with the paper. Where manuscripts from the earlier centuries have survived, their conservation is often made simpler by the fact that they are not as heavily prepared: new repair tissues combine with the original, softer papers with ease, and pigments remain stable on and within the paper structure if moisture is required for treatment.

The purpose of the proposed lecture is to examine the tools and techniques of sizing and burnishing in greater depth, and with an examination of papers from the 12th to the 18th centuries, to discuss how their surfaces affect how easily or otherwise it is to conserve them thereafter.