ICON NEWS

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Banners at the People's History Museum

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lying underneath the *Patch of Grass* painting, which had hitherto only been faintly detected by other methods.

This was the absolute gold standard of technical analysis, hampered only – as Aviva aptly pointed out – by the fact that few conservators have access to a synchrotron (and even if they did getting curatorial permission to take a painting to one would be challenging to say the least). Nevertheless the potential was now clear. This led the Bruker company – which already made the handheld, static point XRF instruments – to develop portable scanning macro XRF machines which could be brought to the painting. Some years ago Aviva had been able to access an early version of one of these in Berlin, which she used to assess a number of her own paintings.

Her analysis of a portrait of Cromwell's mother, for example, illustrated a case where she was able to determine areas of damage and later repainting. The calcium map in this instance indicated chalk for areas of fill, whilst the manganese showed areas of umber retouching. On top of this, at a high enough resolution (50 micrometers) aspects of the artist's technique could also be determined. In this case the mercury map (implying vermillion) was rendered in sufficient detail to show the form of an ear lying under the sitter's iron oxide veil.

Using false colour imaging it is possible to overlay the different maps to build up a picture of the structure of the painting and provide an evocative feeling for the different pigments present. The lead patterns are particularly interesting since, unlike x-ray imaging, they build up a picture of the pattern of lead based paints which is unhampered by the presence of other features (e.g. stretcher bars) and not blocked by metal supports such as copper. Moreover, since lead is a heavy element that emits a number of different characteristic x-ray emissions, the presence of surface lead (determined through the 'M line') can be distinguished from 'deep lead' lying throughout the structure of the painting (the 'L line').

Nevertheless, despite the wealth of information they contain, Aviva was quick to point out that MA-XRF maps are not always easy to decipher and the results are far from straightforward. Indeed the often complex process of their interpretation is the subject of Courtauld student, Silvia Amato's, ongoing PhD research project. Silvia is in the process of analysing a number of the Courtauld's Manet paintings using the more portable and up to date 'Jetstream' macro XRF scanner lent by MOLAB (The mobile laboratory of IPERION CH – the Integrated Platform for the European Research Infrastructure ON Cultural Heritage).

Unexplained features have been noted on these maps. For example the deep lead map for Manet's *Bar at the Folies-Bergère* (1882) was expected to indicate that the figure was initially painted with her hands crossed in front of her, a feature (evident in conventional x-ray images) that the artist later changed. However, confusingly, it does not show this. The reasons are unclear, but Aviva posed the possibility that certain pigments in the overlying paint may have absorbed the x-ray emissions of the deep lead pigments beneath, preventing them from ever reaching the detector.

Clearly then, MA-XRF is a complex form of analysis about which there is still a lot to learn. The other new technique that Aviva briefly discussed is no more straightforward. Forms of IR examination have been around for a long time but so far conventional methods, such as the Osiris camera, have not been able to utilise wavelengths beyond around 1600nm. IR scanners capable of capturing wavelengths up to 2300nm have been in existence for a while, but, perhaps due to their relative lack of portability, have not been in widespread use to date.

Nevertheless when MOLAB lent the Courtauld Institute its NIR scanner it was evident that its greater penetration potential could yield important information. For example, when scanned at 1900nm, Seurat's *Young Women Powdering Herself* (1888-90) shows the artist in the window, a potentially controversial feature – given that the women in the picture was his mistress – which was later replaced with a vase of flowers. Aviva went on to show a series of IR scans of Gauguin's *Nevermore* (1897) taken at increasing wavelengths. At the longer wavelengths it starts to become possible to see features of a very different landscape painting which evidently lies beneath the surface composition. Whilst its tempting to see these scans as taking us increasingly further back in time through the painting process, Aviva warned that the interpretation is by no means this straightforward. What we are actually seeing is a change in the IR absorption of the complex mixture of materials present, hence the technique does not simply map out what came first and what came second in the way that we might like.

It is clear then that whilst both MA-XRF and NIR examination methods hold tremendous potential, both require a great deal of skill and knowledge to sufficiently utilise and interpret. Nevertheless the present research being undertaken at the Courtauld Institute, coupled with increasingly easy access to the instrumentation, should get us one step closer to the many fascinating insights these techniques can offer.

Sarah Maisey Paintings Conservator
National Maritime Museum.

PUBLICATION

HAND PAPERMAKING: special issue of the magazine devoted to hand papermaking in Italy

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It is always a delight to receive *Hand Papermaking*, combining as it does artistic, workshop and technical elements. To receive a special issue about the original home of what was to become the European way of making paper was a special treat.

The first article by **Franco Mariani** traces the development and spread of papermaking through Fabriano, the most famous papermaking city in Italy. Mariani favours the Genova route. This recognises that the many mills established in Al-Andalus (Islamic Spain) continued to follow the traditional Arab methods. The craft followed the sea routes from Spain to Genova, and then via the wool merchants' routes throughout Northern Italy. In Fabriano, however, new types of mechanical stamper were adapted to pulping cloth, gelatine was introduced for sizing and rigid, wire covered moulds with watermarks were developed. This technique then spread throughout Europe.

This is all beautifully presented at the Museum of Paper and Watermark in Fabriano whose Director **Giorgio Pellegrini** contributes two articles, one about the four

The Amatruda paper mill, dating from the fifteenth century, is the last structure situated at the bridge over the Canneto river, in the city of Amalfi, Italy.

Photo: Michele Abbagnara, 2016.

Courtesy of Magnani Historical Archive, Associazione Museo della Carta Onlus, The Carlo Magnani Fund

Master papermakers creating handmade paper at Le Carte, in the first decades of the twentieth century.

paper museums in Italy and the second being an interview with book conservator Gabriele Dondi.

The papermakers of Amalfi contend that paper first arrived in Italy in their city direct from the Arab lands to the south of the Mediterranean. **Giuseppe Amendola Amatruda**, the youngest member of one of the oldest papermaking families in Europe, provides an insight into how their beautiful mill has kept running through the massive industrialisation of papermaking since 1800 and how they can look to the future with confidence.

Annarita Librari writes about how her family have crafted the beautiful chiaroscuro light and shade watermarks for which Cartiere Miliani Fabriano have been renowned since the 1880s. Her article has some particularly beautiful photographs showing how she has continued the craft that she learned from her father Franco and grandfather Eraldo.

In recent years some of the Miliani craftspeople have started their own businesses combining the old traditions with innovative approaches. **Sandro Tiberi** writes about his company, the master papermakers that he learned from and L'Accademia delle Arti Cartarie which he founded in 2014 in Fabriano.

No issue of *Hand Papermaking* would be complete without artistic contributions and in this case **Angela Occhipinti** has written about the work of four Italian paper artists (including herself) with illustrations of their work.

Finally one of those artists, **Roberto Mannino** describes Luigi Mecella's cradle to grave enterprise. Starting as an electronic technician, Mecella is now based at his farm at Argignano near Fabriano. Here he grows hemp, converts it to pulp, forms sheets – either by hand or on a beautiful small cylinder mould machine – collaborates with printers to print them and binds them into books.

Part of the joy of reading *Hand Papermaking* comes from its luscious production standards. It is printed on fine, heavyweight uncoated paper saddle-stitched into a single fifty-two page section. The pages open comfortably in the hand with an arched drape. The images are reproduced to a very high standard and have a certain softness (due to the paper being uncoated) that add to their allure. The Board of this non-profit publisher hopes to switch to full colour soon which would certainly be worth having. Each issue has at least one sample of paper tipped in; this one has three samples.

This Italian issue owes its existence to its Guest Editor **Lynn Sures** who has been travelling to Italy and its papermakers every year for two decades. Her translation make for elegant reading and the original draft articles, in the Italian language, are available to subscribers online.

The Winter 2016 issue will provide valuable information for all paper conservators but will also bring pleasure to those who are not specialised in that field.

Simon Barcham Green BSs (Paper Science)

Hand Papermaking magazine is published twice a year and Hand Papermaking Newsletter is published four times a year. Extra content for both is available to subscribers online in colour. Full details and how to subscribe are available at http://handpapermaking.org/.

The reviewer was the sixth generation of his family to make paper by hand at Hayle Mill, Maidstone. He is a member of the Hand Papermaking International Board of Advisors.

Eraldo Librari, engraving at the Miliani Paper Mill, 1950

Courtesy of Annarita Librari