

RESTORING MICHELANGELO'S PIETA'

by Beatrice Agostini and Paola Rosa *

25 November 2019 saw the start, before thousands of visitors, of the restoration of Michelangelo's most important sculptural masterpiece in the Museo dell'Opera del Duomo in Florence, the *Opera del Duomo Pietà*, commonly known as the *Bandini Pietà*.

To enable the public to stay in touch with this celebrated sculpture, the restoration laboratory was designed on an "open" basis, allowing visitors and enthusiasts to follow and appreciate first hand every phase of this important intervention, thus offering them a unique opportunity to better understand the complex history of Michelangelo's work, the various phases in its creation and the technique that the sculptor adopted.

The four figures representing the episode of the *Deposition* are carved from a single block weighing some 2,700 kg, or roughly one cubic metre of marble.

The sculpture itself provides a map of its own troubled and complex history, the whole surface clearly revealing all the scars that have altered its original aspect over the centuries: fractures, cracking, reworking, scratches, furrows and deposits of various kinds are all indelible marks of the traumatic events that have befallen it since it was first created..

Despite its many tribulations, however, the *Bandini Pietà* had never been subjected to restoration of any kind since it was "restored" by Michelangelo's pupil Tiberio Calcagni in 1500. In addition to glueing back the broken pieces, though naturally without ever attempting to compete with his master, Calcagni reworked the surfaces to create deep undercuts and reinvented what is considered his main contribution, the figure of Mary Magdalen. Thus the operation being concluded today may be considered to be the Florentine *Pietà*'s first true restoration.

Commissioned by the **Opera di Santa Maria del Fiore**, with funding from the **not-for-profit Friends of Florence Foundation** and under the lofty supervision of the **Soprintendenza Archeologia Belle Arti e Paesaggio di Firenze e le province di Pistoia e Prato**, the restoration was performed by restorer **Paola Rosa** in conjunction with **Emanuela Peiretti** and with the scholarly coordination of **Antonio Natali** and **Vincenzo Vaccaro**, with scholarly and art historical advice from **Annamaria Giusti**, with **Samuele Caciagli** in charge of the work and under the direction of **Beatrice Agostini**.

Extensive surface deposits impaired its legibility and colour, including considerable traces of the plaster cast taken by Florentine moulder Oronzio Lelli in 1882 when the sculpture stood in the Cathedral (the cast is now in the Gipsoteca dell'Istituto d'Arte di Firenze).

Thankfully, the excessive presence of plaster was due not to deterioration of the marble but to poor cleaning of the sculpture after the making of the cast, which inevitably left behind it a glaring white effect and excessively dry surfaces. To remedy this unsightliness, a layer of wax had been applied on top of the plaster residue and had been renewed over time, alternating the renewal of the wax layer with sporadic cleansing.

Thus the surface appeared to have a deep amber tinge to it and to be chromatically uneven on account of the natural ageing process of the wax applied over the years, particularly in the folds of the drapery and the protruding parts of the sculpture, in clear contrast with the undercuts which had remained much lighter

Through meticulous analysis and in-depth study of the signs of deterioration on the sculpture, it proved possible to determine the condition of the piece and to define the most appropriate form of intervention, proceeding with topical mapping and subsequently with preliminary cleaning trials.

In order to record the work's *de facto* condition and the various phases of the operation, detailed photographic documentation was prepared by the photographer Alena Fialovà, video material was shot by Giovanni De Stefano's company 3dSign, scans were taken by the architect Lorenzo Sanna using the laser scanner survey technique and a photogrammetric survey was conducted by Florence University's DIDA Architecture Department, in order to enable us to reconstruct every part of the sculpture group using high-precision 3D models and to examine, in particular, the joints where the fractured parts had been glued back on.

A sweeping diagnostic campaign to discover the state and nature of the deterioration allowed us to analyse the composition of the deposits on the surface. Our absolute need to gain in-depth knowledge of the work's condition left us with no option but to remove samples, which were then analysed in part in the laboratories of the Soprintendenza¹, at Pisa University's DCCI² and in part by Adarte snc in its Florence University laboratories³, through the use of instrumentation specifically designed for chemical-physical and mineralogical-petrographical analysis. It became clear from the very first results that the diagnosis confirmed our visual perception of the work's condition, namely that the marble surface was covered in plaster, deteriorated wax and wax mixed with soot. Following the reopening of the restoration lab after the stop enforced by the Covid-19 emergency, samples were taken for researching the quarry in which the marble had originate, with isotopic analysis, EPR spectrographic analysis and an analysis of the degree of granulometry being conducted by Florence University's Earth Sciences Department with the assistance of Ferrara University's Physics and Sciences Department and of the ISPC-CNR⁴.

The samples in question were taken from the fractures on the marble parts in an effort to characterise the marble of all the added and reassembled parts present in the sculpture so that we could work back to the origin of the block carved by the master. A full analysis was completed on six samples which were compared with material from the quarries of Colonnata, Miseglia, Torano and Seravezza. The result brought the samples together in a single homogeneous group that proved to be compatible with the characteristics of marble from the quarry at Seravezza in the province of Lucca. This result is of the utmost importance because it disproves what the literature on the subject had always maintained hitherto, namely that the marble block used for the *Pietà* came from Carrara, the quarry that Michelangelo traditionally used the most for his sculptures. There are endless hypotheses as to how Michelangelo got hold of this block of marble, given that no document concerning its purchase has ever been found. The quarries at Seravezza were extremely active in Etruscan and Roman times and were owned by the Medici in the 16th century, but they were no longer being extensively worked and indeed were fairly difficult to access by road. In 1516 Pope Leo X commissioned Michelangelo to design the sculptural decoration for the façade of the church of San Lorenzo in Florence, enjoining him to use marble from his estates and to build a road from the quarries down to the sea. However, we know that Michelangelo was unhappy with the quality of these blocks because they revealed sudden unforeseen veining and micro-fractures which it was extremely difficult to identify or to understand the direction they took inside the block. Thus what we have here is increasingly solid confirmation of the fact that the

¹ Soprintendenza Archeologia, Belle Arti e Paesaggio per la città metropolitana di Firenze e le province di Pistoia e Prato

² Pisa University Chemistry and Industrial Chemistry Department

³ Laboratories of the Consorzio CSGI at the Chemistry Department, Earth Sciences Department laboratories

⁴ Istituto di Scienze del Patrimonio Culturale

⁵ Opificio delle Pietre Dure

marble used for the *Pietà*, which came from this area, may truly have been as flawed as Vasari claims in his "Lives of the Artists" when he talks about a marble that was hard, full of impurities and gave off sparks with every blow of the chisel. During restoration we encountered numerous small inclusions of pyrite and plenty of micro-cracks, one in particular on the base which can be seen at both the front and the back of the sculpture and which Michelangelo may well have found inside the block of marble while he was carving Christ's and the Virgin's left arms, thus forcing him to abandon the job due to the impossibility of carrying on working with the marble. Once again, in an attempt to identify a sort of timeline of the interventions performed on the sculpture, referring to samples taken in the 1990s by the OPD⁵ and discussed in J. Wasserman's publication dated 2006, we also analysed the puttying after its removal and our analysis confirmed the composition initially mooted.

The *impasto* consists of plaster and marble dust on the fractures where the pieces match perfectly, namely Christ's and the Magdalen's right arms, while on the breaks on Christ's and the Virgin's left arms it consists of rosin and marble dust (a material considered older). An analysis and a historical and critical study of the work also led to the discovery or confirmation of certain details legible on the sculpture's surface: photographs from the Alinari Archive taken in the last century, showing the sculpture in its earlier position behind the high altar in the Cathedral with a wooden ladder resting on the back of it, provided an explanation for the absence of wax dripping from candlesticks or of protective substances commonly used in ordinary maintenance of the time and found on virtually the whole of the rest of the sculpture's surface. The wax dripping and plaster residue from the 19th century cast was meticulously removed with a scalpel in a dry environment, alternating this procedure with water-based cleaning to eliminate surface dirt.

After various trials, the cleaning process proper got under way in 2020 using pads soaked in deionised and lightly heated water, starting with the back of the sculpture which presented a greater abundance of dark deposits and which had never been cleaned to date because it had never been visible to the public. Continuing our cleaning operations on the side of the figure of Mary Magdalen, we encountered extensive discolouration in the shape of trickling that had already shown up in UV photographs (Ottaviano Caruso). The wax presented itself both in the shape of small, closely spaced splashes and dripping in various forms, thicknesses and lengths, and in the shape of broad, compact, even layers caused by the repeated use of brushes and cloths to polish and to impart a sheen to the sculpture in the past.

The most complex aspect of the cleaning lay in attempting to achieve an even and satisfying balance of colour, respectful of the stone's surface despite the presence of a broad variety of deteriorated substances and deposits. In the areas where the wax had taken on an uneven, dark amber colour due to its natural ageing process, cleaning trials were conducted both with localised dabbing with solvents and with compresses of ammonium carbonate in a water solution applied for varying amounts of time in order to lighten the discolouration as much as possible.

And finally, after removing the old and unsightly puttying, new puttying was devised with the intention of "camouflaging" it as far as possible in terms of both mass and colour, the aim being to achieve a pleasing, even and seamless legibility of the carved surface in order to offer the observer an image of the *Pietà* carved "*ex uno lapide*", or from a single stone, which is most probably the image envisaged by Michelangelo when he set his hand to carving the work.

The exceptional nature of this restoration, above and beyond the need for a purely conservative intervention, lies in its having restored dignity to this masterpiece by Michelangelo whose outstanding modelling it has been particularly difficult to appreciate up until now.

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