



Enthralled by classical color

Digital microscopes uncover new insights into classical sculpture

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Everyone has admired the brilliant white marble of classical statues. However, new scientific research now reveals that Greek and Roman statues were most definitely not white but were decorated with elaborate ornamentation and brilliant colors. Minerals such as blue azurite or green malachite were finely ground and mixed into binding agents such as egg or casein. Painting the statues made them more striking in appearance and also provided important information on the meaning of the artwork for viewers. The Ny Carlsberg Glyptotek in Copenhagen is a leading member of the Copenhagen Polychromy Network (CPN), an interdisciplinary research team that has already delivered significant research results. The current project is dedicated to studying the sculptures in the Glyptotek and recording all traces of paint. The team is already using a Leica M651 surgical microscope. Conservator Maria Louise Sargent is now also using a Leica DVM3000 digital microscope.

Q: Maria Louise Sargent, what do you do at the Ny Carlsberg Glyptotek?

A: I am employed as a conservator at the Ny Carlsberg Glyptotek. For the next two and a half years I will be working on the current project to search for and analyze color pigments on the sculptures. The white marble sculptures were all painted and now we want to discover their original appearance. We are examining works originating in classical Greece and Rome. We will be using the digital microscope for this project.

Q: Why did you select a digital microscope?

A: Compared to the stereo microscope on a floor stand the digital microscope offers greater flexibility. The statues are up to two meters tall and we can only examine them to a limited degree with the stereo microscope. Another reason is the limited magnification of the stereo microscope, which offers a maximum magnification of only 20x. The new digital microscope can magnify up to 160x. The color pigments and residues of the original paint are no more than traces and we now expect to be able to detect them more easily and analyze them in more detail with the new microscope. The digital technology will also enable us to record videos and images and show them on a monitor for discussion.

Q: Do you record the sample?

A: Yes, in many cases the only proof of the presence of paint is what I see through the microscope. We scan the statue systematically centimeter by centimeter. We examine the areas with paint residues on the monitor and record an image for documentation. The specific site is always documented with a digital image and a description of the location in words.

Q: Do you use any other techniques for the examination?

A: Yes, we are also working with fluorescence to examine the state of the statue and to determine whether it still has traces of paint. This examination is conducted in a dark environment with a special camera and special lighting. We do not use any other technology or procedures, because the benefit compared to the expense would be too small. You can see that the microscope is very important for our work and it is used intensively.



Traces of red, ochre-colored and black pigments can be detected on the statue

The "woman of Palmyra" is a limestone statue from Palmyra in Syria dating from around 190–210 B.C. It was decorated with rich jewelry, which may have held a glass ball in its center.

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