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Malachite: Art Unraveled

When you look at malachite, you see the unfolding of artistry. As I searched through the Orma J. Smith Museum, I saw many beautiful specimens, but what really caught my eye was a large piece of a mineral called malachite. I had heard of malachite, but I had never seen it in person before. There were several different forms of the stone in the museum, each as intriguing as the next. One specimen was left in its raw form, while another was polished to a shine, accentuating the stone's enchanting hues of green. Immediately, my head was flooded with questions: Why are there so many shades of green? How has malachite been used by humans? After quickly jotting down the dozens of questions I came up with, I set to work trying to uncover the mysteries of malachite. Several days of researching later, I felt I had a stronger understanding of the stone. Malachite is a piece of nature's artistry and an inspiration to human artistry through the ages.

Earth's creation of malachite is a work of art in and of itself. Originally, the mysterious green stone was mined on the Sinai Peninsula of Egypt as early as 4000 BC (Susarla et al, 401). Since then, it has been found in several other locations around the world. In the 1800s, most of the malachite on the market was coming from the Ural Mountains of the U.S.S.R. (King, 2). However, modern malachite is mined from the Democratic Republic of the Congo and Chile (Gettens & Fitzhugh, 2; King, 2). This mineral is a copper carbonate, with the chemical formula $\text{Cu}_2(\text{CO}_3)(\text{OH})_2$ (King, 1). At shallow depths in the Earth, just above copper deposits in an area

called the “oxidizing zone,” copper ions contact carbonate molecules, precipitating the malachite mineral. When the mineral precipitates, it seems to form a central core and then build up layers around that core (Malachite and Works of Art, 265). This causes the mass of malachite to be in a rounded, or botryoidal, form (Gettens & Fitzhugh, 5). Perhaps the most striking feature of the stone is that when cut in cross sections, it shows the layers of formation, which range from green so dark it is almost black to a pale pastel green (Gettens & Fitzhugh, 5). Each color is dependent on how rich the precipitate was at different periods of formation (Malachite and Works of Art, 265). When you look at malachite, the artistic talents of mother nature shine brightly. From its rich color to its organically shaped layers, this mineral is an artistic creation. The years of formation required to achieve such a masterpiece prove to be worth it when the stone is observed by the human eye.

Malachite’s undeniable beauty was used to create human beauty in the form of makeup. Beauty is a large piece of human culture in today’s day and age, and it was no different thousands of years ago. Many women, and even men, today apply makeup nearly every day. This habit did not just come out of the blue; it has been going on for centuries (French, 1). Tombs from the First Dynasty of Egypt, circa 3100 BC, provide evidence of the historical use of makeup (French, 1). Since the original malachite deposits were discovered on the Sinai Peninsula, it is no surprise that Egyptians were the earliest people to utilize the stone as a pigment (Gettens & Gitzhugh, 3). Prior to dynastic times, Egyptians began grinding malachite and using it as an eyeshadow (Gettens & Gitzhugh, 3). Decorating one’s body with art was considered a sign of holiness and was key to the Egyptians’ lives (Susarla et al, 401). The Egyptians valued their makeup so greatly that they were even sometimes buried with their makeup palettes to keep them close by in the afterlife (Susarla et al, 401). Vibrant green

pigments were believed to ward off the “evil eye,” allowing the wearer of the color to reach Heaven (Mayer, 8550). Malachite green became the makeup of choice for this reason. Not only did it contribute to the holiness of the wearer just by being makeup, but it also kept them safe from Evil and made them that much more likely to go to Heaven. To obtain the ideal bright green color, the stone had to be ground into a coarse powder, for if it was ground too finely, the pigment would be a pale green (Gettens & Fitzhugh, 3). Then, the stone was applied to the body. Evidence shows that it was used as an eyeshadow, but it is possible that the pigment was applied as body art as well. The Egyptians’ decorating of their bodies with malachite pigment was the first instance in which it was used as an art form, aside from its creation in nature. This craft set a precedence for the future generations to obtain green pigment from grinding the malachite stone.

Many different materials can be used to make paint pigments, even malachite. Painting is an art that has evolved with technology since the beginning of human history. Green paint pigments were once made of crushed plants, but soon, artists looked for new ways of creating more vivid greens, turning to minerals. Malachite was of interest because it consisted of so many different shades of green and its color did not fade from exposure to light (King, 3; Gettens & Fitzhugh, 7). Paint makers followed a process similar to that of Egyptian makeup, crushing and grinding the stone until the powder was of the needed consistency; either fine, medium, or coarse (Gettens & Fitzhugh, 4). When this powder was mixed with an aqueous medium, a different shade of paint was produced from each grade: fine produced light green, medium produced medium green, and coarse produced dark green (Gettens & Fitzhugh, 4). In the ninth and tenth centuries, painters in Western China used coarse-ground malachite as a dark pigment for foliage and fine-ground malachite as a light pigment to represent bright green costumes (Gettens & Fitzhugh, 3). As one can see from this example, the stone has been used as a pigment in Asia for

centuries and it is still in use today in the scroll and screen paintings of Japan (Gettens & Fitzhugh, 3). One of the most notable pieces of art that was painted using malachite was Raphael's "Madonna and Child Enthroned with Saints" (Gettens & Fitzhugh, 18). The use of malachite in such a well-known work shows how influential this stone was to the world of artistry. Raphael's work reiterates that malachite was a desirable pigment for use in various artistic mediums. Although malachite was regarded as a wonderful pigment, there was one quality of the stone that would stop it from becoming extremely popular: it was simply too expensive (Pastoreau, 186). Only the leading artists could afford the malachite pigment as they were certain they could profit from their pieces. At this time, it seemed that malachite green would be reserved to only those of the highest rank in society.

The upperclass enjoyed the look of malachite and could afford it in great abundance, so they incorporated it into their homes. The Roman Emperor Charles V once had an expansive collection of minerals (Holmes, 203). His collection was comprised of many beautiful stones such as jasper, emerald, and aquamarine, but it must be noted that his collection also included a large amount of malachite (Holmes, 203). The emperor saw the beauty of the stone and took it as his own to appreciate for the rest of his life. Many other noble people found creative ways to savor the elegance of malachite in the comfort of their own homes as well. Since ancient times, malachite has been used as an inlay in the most prestigious churches and cathedrals (Malachite, 1). Later, Russian czars began using the stone for ornaments and intricate inlay work in their castles (Malachite Healing Properties, Meanings, and Uses, 3). In the mid-1800s, *The Scientific American* published an article featuring malachite as a work of art in furniture and describing, in detail, the process by which this art was performed (Malachite and Works of Art, 265). This article showed the public that malachite was newsworthy and served to popularize it among

those who could meet the expense of custom pieces featuring the stone. To achieve the desired effect, stone-crafters used circular saws to cut thin veneers from the largest pieces of malachite (Malachite and Works of Art, 265). Once a veneer was obtained, the stone-crafter selected a section of the stone that he found would complement his piece and carefully cut that section out, grinding the edges to a smooth finish (Malachite and Works of Art, 265-266). Finally, he cemented the malachite in place with a glue made from the stone's dust (Malachite and Works of Art, 266). When the artist finished, there was not a single seam in sight and he had taken an ordinary piece of furniture or cabinetry and turned it into an alluring decoration, showcasing the plays of green in the stone (Malachite and Works of Art, 266). At this time in history, only those with significant resources were able to secure and commission artisans to create malachite pieces for display in their homes, but the popularity and desire for these items was expanding.

Artistry influenced by malachite did not always take a physical form. There were early crafters who formulated stories about the stone that were believed for centuries and even to this day. These tales, whether they were mythical or not, made malachite into a symbol for people to hold onto and believe in. Throughout history, green has been associated with money and luck making malachite the perfect candidate to become a stone of positive influence, and it did just that (Braid, 3). Malachite was believed to be the “merchant stone,” protecting merchants from dangers along their routes (Braid, 1). With malachite's growing demand, large amounts of the stone began circulating through trade routes, making this a key legend that merchants believed in (Braid, 1). Myths have it that the stone was also able to warn its wearer of impending disasters, shifting the protection aspects of malachite to include all people, not just merchants (Braid, 4). The lore surrounding malachite made it even more sought after in developing markets to create jewelry. As the symbolism of malachite spread, those who could acquire it scrambled to bring it

into their lives. They wore the stone as jewelry, believing that it would protect them from what was considered the “Evil Eye” (Mayer, 8548). This “Evil Eye” was an umbrella term that took in all unfortunate things that could happen to merchants and their customers, hence all those in possession of the stone (Mayer, 8548). Most commonly, to create malachite jewelry, a chunk of malachite was carved into a “scarab,” which was a round version of the stone, then engraved with the symbol of the sun, and finally set into a ring that would be worn everyday (Kunz, 97, 117). The sun emblem was essential to ward off evil using the representation of light, since all things evil were attracted to and represented darkness (Kunz, 97). Later, malachite’s symbolic properties expanded to include fertility and strength (Braid, 3; Mayer, 8550). Those who believed in the supernatural properties of minerals often kept malachite nearby in hopes that they would gain the strength to push through their difficulties find themselves amidst a great fortune (Braid, 3). Another strategy believers practiced was keeping the stone nearby a woman who was expecting to become or already was pregnant (Mayer, 8550). The use of malachite was anticipated to aid in the gestation and delivery of the child.

Each of these beliefs about malachite factored into its superb marketability (Braid, 2). In fact, the art of selling a product has always been an incredible profession. In today’s society, we might think of a salesman as someone who markets cars or houses, but in truth, a salesman is anyone who presents a product’s benefits as a reason to buy it. One can interpret the crafting of symbolic stories about malachite as a form of art. Not only were the makers of the stories creative, but they also tailored their tales to suit the lives of the customer. Consumers were looking for a product that they could use for whatever their purpose might have been, whether that be physical or spiritual.

A material expression of art that is prominent in modern times is medicine. Scientists and doctors work together to find ways of correcting errors in the human body, modifying it to live longer. In effect, researchers and practitioners are painting a picture using drugs and other procedures. As mentioned earlier in this essay, malachite was once believed to assist women in the carrying and birthing of children (Malachite Healing Properties, Meanings, and Uses, 6). Historically, crystal therapies using malachite were performed to regulate the menstrual cycle, ease anxiety and depression, and dissipate negative energy (Malachite Healing Properties, Meanings, and Uses, 5). Malachite's use as a healing stone is evidenced through records of medicinal rituals performed by healers (Malachite Healing Properties, Meanings, and Uses, 5). This shows that from the very beginning of the medicinal art, people worked towards creating methods that would heal their ailments, using all options available to them. Although none of these medical uses have been scientifically proven, at one point they were counted on to help those suffering from these conditions.

One of the earliest uses of malachite as a curative treatment based on science emerges from the age of the Egyptians. They applied ground malachite to the eye area to prevent water-borne infections from the Nile River (Susarla et al, 401). Egyptian peoples had access to malachite before anyone else in the world, allowing ample time for them to become creative and do primitive research about the properties of the stone. In the 20th century, the Egyptian belief of malachite being an antiseptic was confirmed by licensed researchers (Susarla et al, 401). After this discovery, medical professionals began looking for other ways that the mineral might be useful in their specialty areas.

One such specialty that found a use for malachite is plastic surgery. Plastic surgeons beginning in 1929 up to present time have used ink made from malachite as a marker for

numerous surgeries, including cleft lip repairs (Susarla et al, 402). They found that this pigment does not rub off easily and since it is antiseptic, malachite ink is safe for surgical use (Susarla et al, 402). Dr. Paul Manson of the Johns Hopkins Children's Hospital swears by this technique and employs it in his surgeries every day (Susarla et al, 402). For over 5000 years, malachite has been integral to the artisanry of medicine in a menagerie of applications. It manifests itself through its use by practitioners in the art of healing, longevity, procreation, and reparation of genetic malformations. Nowadays, we often look at medicine only as a science, but the essence of medical therapy is based in the art of exploration and creation, just like the arts of painting, stonework, and symbolism development. Malachite has played a pivotal role in the advancement of medicine for thousands of years.

Malachite is a representation of how artwork has evolved. After all these thousands of years, humans continue to take malachite, a piece of art made by the Earth, and use it to create their own artistry of all different forms. Malachite forms meaning and value in our society through its color, symbolic properties, and medicinal applications. While there was a time period that the upper class were the only ones who could obtain malachite, humans from all walks of life and all time periods have seen the beauty of this stone and been inspired by it to fashion their own beautiful work. As I look at the malachite specimens in the Orma J. Smith Museum after deeply researching the stone for so long, I feel enlightened. Knowing that this stone has caused so much development and so many visions to be realized, I appreciate the stone for its larger meaning.

There will always be more questions to ask about this wonderous mineral, but I have learned a few things. It is not just a rock, it is not just green, and it is not just a copper carbonate.

Malachite is imagination, originality, innovation, and individuality. When I look at art, I now think of malachite.

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