OFF COLOR

Deconstructing the Color Wheel

One Disturbing Shade at a Time

BY MICHAEL FRANCO

SEEING RED When the Spanish arrived in Mexico in the early 1500s, they weren't just shocked by the impressive Aztec temples, they were also stunned by the Mexicans' bright red clothing. Europeans hadn't yet discovered how to make a color that vibrant, and the conquistadors were mesmerized.

The Aztecs didn't guard their secret particularly well, though. They showed the Spanish how to make the red dye by crushing the carcasses of *cochineals*, female beetles that live on cacti. When the conquistadors left to return to their homeland, they made off with the Aztecs' gold—and their fashion secret. For the next few hundred years, the Spanish made a fortune producing the crimson dye, keeping the source of the color closely guarded.

Red dye from cochineals is still used today in lipstick and food. After all, it's organic! You can find it in juices, jams, and maraschino cherries. But if you're squeamish about ingesting beetle juice, it's easy to avoid. In 2009, the FDA required it to be declared on product labels.

PRETTY IN PINK Pink, now the province of Paris Hilton and Barbie, was once considered the most appropriate color for clothing boys. In 1918, the hospital trade journal *Infants' Department* explained the rationale behind the fashion trend: "The generally accepted rule is pink for the boy and blue for the girl. The reason is that pink being a more decided and stronger color is more suitable for the boy; while blue, which is more delicate and dainty, is prettier for the girl."

How did boys and girls swap colors? According to one theory, Hitler made homosexuals wear pink triangles on their uniforms in his work camps, and men have been wary of the color ever since.

PURPLE MAJESTY Once upon a time, a dog belonging to Hercules went for a walk along the beach. When he returned to his master, the pup's mouth was bright purple. Hercules' girlfriend at the time, a nymph named Tyra, fell in love with the color, and she told Hercules that she wouldn't see him again until he gave her a robe of the same shade. So Hercules, who had a weakness for nymphs, tracked the dog back to the beach and found the source: His dog had been eating sea snails.

The story of Tyra's robe is a myth, but Tyrian purple—the color worn exclusively by imperial officers and clergy in ancient Rome—really does come from sea snails, specifically *Bolinus brandaris*. To get the regal color, Roman dye makers would pulverize the snails, boil them in salt, and then leave them in the sun until the secretions from their glands turned purple. Eight thousand of the hapless snails were needed for one gram of the very expensive dye.

BLUE BLOODED Prussian blue—the pigment favored by Picasso during his Blue Period—was discovered completely by accident. Back in 1704, a Berlin dye maker known as Diesbach was trying to create a rich, red pigment from the cochineal beetle *[see entry on opposite page]*. In the process, he used a potassium-rich substance called potash and "animal oil," a mixture of bones and blood. But when the potash and the blood combined with iron sulphate from the cochineal, it produced the world's first synthetic blue pigment. As PBS painter Bob Ross would have said, it was a happy little accident.

SICKLY GREEN When Swedish chemist Carl Wilhelm Scheele was investigating the chemical properties of arsenic in the 1770s, he used the toxic substance to make a verdant pigment known as Scheele's green. In the process, he ingested way too much arsenic, essentially poisoning himself to death by the age of 43.

Sadly, that wasn't the only life Scheele's green would claim. In Europe, the color was used extensively in decorating. In fact, a study done in England at the end of the 19th century indicated that four out of every five wallpapers contained arsenic from Scheele's green. Researchers of the time noted that when the wallpaper became damp, it gave off a "mouse-like" odor that caused illness and even death. In the 1930s, scientists confirmed that the smell was a lethal gas produced by a fungus feeding off arsenic in the wallpaper.

Interestingly, Scheele's green may have even contributed to the death of Napoleon. During the last years of his life, Napoleon lived in exile in St. Helena, a humid island off the west coast of Africa. His bedroom was wallpapered bright green, and the air in St. Helena was definitely moist enough to grow fungus. In 2001, scientists analyzed samples of Napoleon's hair and discovered arsenic levels as much as 38 times higher than normal.

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