COLORS / PRUSSIAN BLUE
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Will posterity remember us for our successes or our mistakes? Will our legacy be the result of a life’s dedicated application, or a moment’s half-forgotten accident? Years can be spent chasing chimeras without realizing that our claim to enduring fame was forged in the blink of an eye in the heat of pursuit. Such is the tale of Johann Konrad Dippel, whose ineradicable achievement—the creation of Prussian Blue—was of little interest to him when placed beside his grand magical dreams.

Dippel was born in Castle Frankenstein in 1673. It is not known whether lightning attended his birth, but certainly it would not have been an overly dramatic sign for a man who seemed determined to blaze his way into history. His father intended him to be a minister, but from an early age Dippel sought astonishment and argument rather than concord and conformity. He openly questioned the Catechism when he was nine years old, before spending his youth aggressively defending, then mercilessly attacking, orthodox Lutheranism. While attending theological college in Giessen he began to publish satirical religious tracts under the name Christianus Democritus. These were written with a vehemence that many found unseemly.

His religious contrariness brought him minor infamy. He was labeled “ein indifferentistischer Schwarmer” (“an indifferent fanatic”), and found himself persecuted by the clergy and threatened by the mob. Perhaps it was little surprise that within two years of moving to Strasbourg, where he had hoped to make his name in theological study, he had killed a man in a duel and fled back to Giessen.

This setback did not humble Dippel’s vaulting ambition. His unorthodox interests had by now broadened to include palmistry and astrology, and after reading the writings of Ramon Lull, the medieval Spanish mystic, Dippel came to believe in his own ability to transmute lead into gold. He bought a small estate, on credit, where he might work in peace, but after eight months of continuous heating, his crucible cracked. Pressure from his creditors forced him to go into hiding.

Moving to Berlin, he created a palatial laboratory in which he sought to achieve that other alchemical dream: a universal remedy. Dippel believed that the secret to this lay in the oil created by the destructive distillation of animal parts. Leather, hoofs, and horns were boiled down into a malodorous treacle that became known as “Dippel’s Oil” and which he claimed could cure fevers, colds, and epilepsy. Dippel’s Oil gained a certain notoriety as a medicine—Diderot would later openly question its worth—but its success as a sheep dip and insecticide was unchallenged.

Soon the sheer pitch of his ambition attracted the attention of King Frederick I. The Prussian court was, at the time, besieged by alchemists who promised the possibility of limitless wealth in exchange for royal patronage. Dippel was asked to act as referee to their claims. A lesser man might have taken this post as a sinecure, but Dippel was no cynic. He did not seek wealth, only gold, and as such was a conscientious judge. He unmasked pretenders but also sought to learn the secrets of those he thought were genuine. In particular, he waxed rhapsodic about meeting the mysterious Lascaris, who was believed to have performed a double transmutation, changing mercury into gold and gold into silver.

It seems only fitting that a man who believed so utterly in the efficaciousness of alchemy should find the fulfillment of his genius as a direct, albeit unwarranted, result of his fevered alchemical research. In 1704, a dye-maker named Diesbach, who shared Dippel’s laboratory, was in the midst of creating a batch of cochineal lake—a deep red—formulated by the boiling of insects and the addition of alum, green vitriol, and potash. Discovering that he had no potash to hand, he borrowed some from his colleague and added it to his heavily pestled insects. As he mixed and mingled he discovered, to his astonishment, that what he was creating was not a deep red, but instead a dark, ungodly blue.

Upon being informed of this uncalled-for transmutation, Dippel tried to piece together the reason for it. The potash Diesbach had used had previously been employed in the creation of Dippel’s Oil. It was thus contaminated with animal blood. When mixed with the green vitriol (iron sulfate), this blood caused a reaction, and a blue that had never before been seen on earth was brought into existence. One can imagine Dippel, the pale student of unhallowed arts, kneeling beside the thing he had put together, quite uncomprehending that this, rather than his alchemy, would be his greatest legacy. He named the newborn color Berlin Blue.

At the time, blue was a particularly difficult color to create and work: azurite turned green when mixed with water; smalt and woad tended to fade; indigo was not colorfast; and ultramarine could only be made from the crushed lapis lazuli mined in the mountains of Bada-khshan and cost more than gold. But Dippel’s blue had a steadfastness, a vividness, and a simplicity of creation that surpassed them all. Unlike its creator, it was immediately welcomed by the world.
A guide to Prussian military uniforms from 1746 to 1756, undated. From the Hendrik Jacobus Vinkhuijzen Collection of Military Costume Illustration. Courtesy the New York Public Library.
Fittingly for a mixture of blood and iron, one of its first uses was to dye the uniforms of the Prussian Army, from which it gained its more familiar name. As the army expanded under Frederick the Great, Prussian blue became a symbol of Teutonic aggression, although after that army’s decisive intervention at the Battle of Waterloo calling someone “my Prussian blue” also became a term of endearment in England.

Meanwhile the color’s complex molecular structure (which was not fully described until 1777) allowed it adapt to a number of quite different environments. Prussian blue became an indelible mainstay of Victorian innovation, providing the blue in blueprints and the tincture in the early photographs known as cyanotypes. Artists flocked to use it. Japanese printmakers dismissed their beloved indigo for it, while in France the Impressionists used it lavishly in their plein air compositions (only Renoir abstained, declaring he was “horrified” by the color). Soon Prussian Blue was working its way into every nook and cranny of society, becoming a pigment in printing inks, typewriter ribbons, and cosmetics.

Yet Prussian Blue’s success was not confined to the visible, exterior world. It slowly began to move inside us, inveigling its way into our bodies and displaying far more efficaciousness than Dippel’s Oil ever had. It became an antidote to heavy metal poisoning and remains the pathologist’s leading tool in detecting lead poisoning. Encroaching onto the microscopic world, it revealed itself as a natural molecule-based magnet.

There was a solitary blip in its relentless evolution when, in 1958, Crayola renamed their “Prussian Blue” crayon “Midnight Blue,” following schoolteachers’ complaints that explaining the causes of the Thirty Years’ War severely retarded their pupils’ attempts to color-by-numbers. But otherwise the color’s spread has been inexorable. It has even gained a role—as Dippel himself had—as an important arbiter of truth. Its appearance in paintings made before 1704 is one of the key ways to detect a forgery. Similarly, its absence from the gas chambers at Auschwitz has been used as a speculative crutch by Holocaust deniers who claim it should have appeared there as the byproduct of the interaction between cyanide, a substance found in both Zyklon-B and Prussian Blue, and the iron in the chambers’ walls. A neo-fascist teen folk group recently named themselves after the color.

But while Prussian Blue has rampaged across time and space, its popularity assured by its constant revelation of new characteristics, Johann Konrad Dippel remained fatefully trapped within his own time and antagonistic personality. In 1707, after years of luckless alchemical experimentation, he left Berlin and became a student of medicine in Leyden. For reasons unknown, he was jailed for seven years on the Danish island of Bornholm, where he spent his incarceration convincing himself that ancient Egyptians had once inhabited the same land. European royalty’s well-known weakness for alchemists saw him freed after seven years, and he became physician to the Swedish court in Stockholm, but once again his argumentative character brought this role to a premature end. His last years were spent as a guest at the Castle Wittgenstein where he engaged in further theological controversies and alchemical research. In 1733, he predicted that he would live until he was 135 years old. With characteristic exactitude, he was found dead in his bed the following spring.

Posterity has been no kinder to Dippel than the age in which he lived. Recent attempts to recognize the alchemist who was born in Castle Frankenstein, who worked with animal parts, and who attempted to defy the laws of nature, as the inspiration for Mary Shelley’s Frankenstein have been deemed highly improbable by scholars. Yet one thing is immutable: Dippel’s most successful creation—a blue deeper than any God had chosen to create for Himself—could not have come into being without his fiery, misguided, and ill-fated excesses.