

SEISMA

PRIMA MATERIA: ELEMENTAL ART

20 APRIL 2023 · PAUL CAREY-KENT



The Aldrich Contemporary Art Museum in Ridgefield, Connecticut, currently provides a fascinating insight into the interface between science and the materials used by artists. ‘Prima Materia: The Periodic Table in Contemporary Art’ is an exhibition of new and recent works by 24 artists, utilising 64 of the 118 elements from the periodic table. What led its curator, Richard Klein, to this ambitious show?

‘Working in museum environment over a number of years’, he explained, ‘I became

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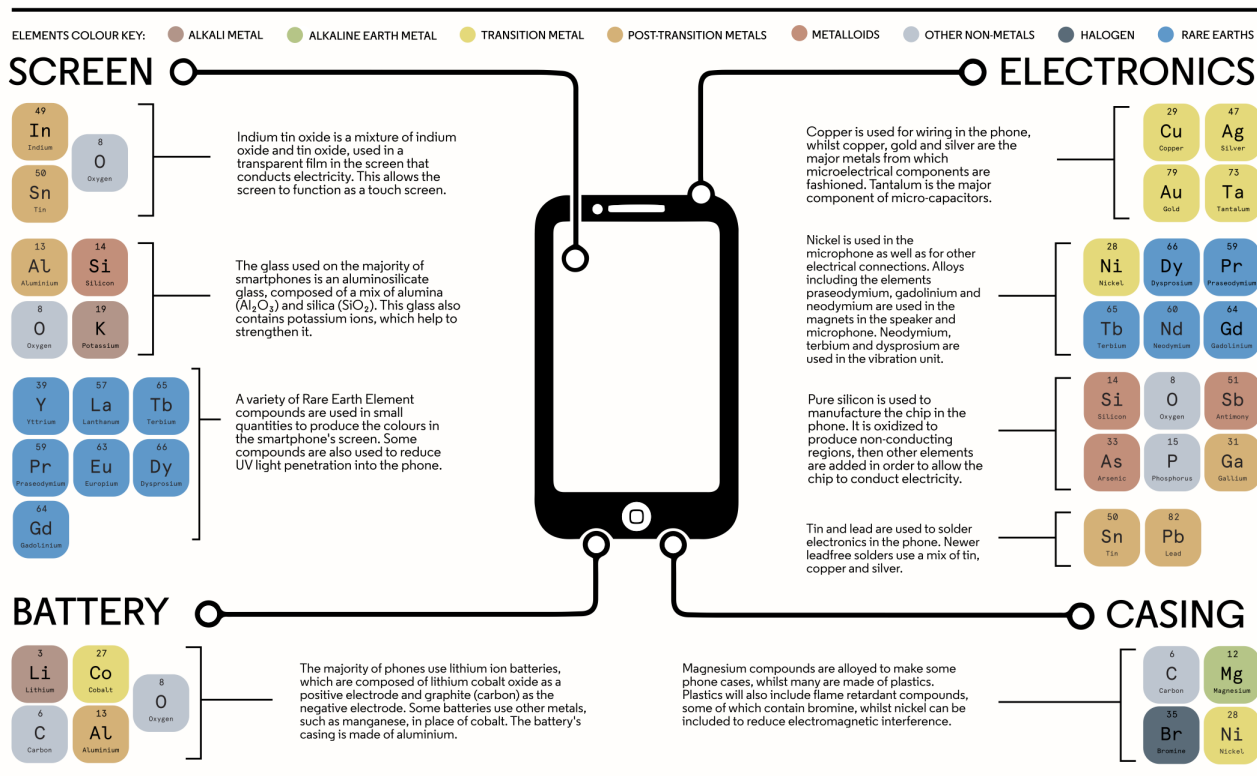
set me working on the show.' Prima materia (first matter) was a concept first proposed by Aristotle to describe the primitive, formless base for all matter. The modern equivalents come from the Latin *elementum*, meaning 'most basic form', and a pure element is made of atoms of a single type.

Klein doesn't have a background in science, and his focus isn't on the art explaining the science. Rather, he had three art-related considerations in mind when choosing what to include. Were they compelling as art? Did they make meaningful use of the particular elements chosen? And did they display the beauty of the materials? Most people, for example, are surprised to learn that Dove Bradshaw's sculpture of her husband – fellow artist William Anastasi, incidentally – is made of solid sulphur, both because sulphur's appearance is little-known and because it is a very rare material in art. Sulphur is popularly connected to the devil – or Lucifer – due in large part to the way it condenses around volcanic vents and hot springs. That has led people to see it a product of the underworld: hence sulphur's alternative name 'brimstone', picking up on its appearance near subterranean openings. Here the playful attribution of the name to Bradshaw's partner comes with an unusual curatorial consideration: 'a week before the opening', says Klein, 'I got an email from Myra Mimlitsch-Gray, whose works are in silver, pointing out that sulphur oxidises and tarnishes silver. Luckily the works were already in separate rooms ...'



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the forbidden fruit that ‘poisoned’ Adam and Eve’s state of innocence, and on the belief that apple seeds themselves are poisonous... as reiterated by the Brothers Grimm in their 1812 fairy tale Snow White and the Seven Dwarfs.’ And Bradshaw’s more wide-ranging ‘Self Interest’, 1999, brings the periodic table from external and abstract to intimate and personal, by presenting 59 elements of the body isolated in etched Pyrex flasks, proportioned by weight based on a 100-pound person. Obviously oxygen, carbon, hydrogen, nitrogen and calcium feature; but more surprisingly, for example, barium, tin, titanium, boron, nickel, selenium, chromium and – yes – arsenic. ‘Acting as a mirror of sorts’, suggests Klein, ‘the piece confronts the viewer with themselves, stripped down to bare essentials.’



So what does your mobile phone have in common with that? Not only is it arguably part of contemporary identity, but the phone also contains 29 mostly little-known elements. ‘So first’, says Klein, ‘you think ‘I’m made of all this’ and then ‘all these odd and rare things are right there in my pocket.’ Chemist Andy Brunning’s ‘Compound Interest Elements of a Smartphone’, 2014, sets them out as an Infographic. Many of a phone’s components are rare and geo-politically sensitive. Klein sees that as part of

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different but not necessarily more environmentally friendly group of elements that also need to be wrestled from the earth. A large wind turbine utilizes around half a ton of rare earth metals, including neodymium, praseodymium, and terbium, while electric vehicles need nickel and lithium in large quantities for their batteries.'



There is actually a phone in the show – but it's made by The Dufala Brothers out of polished anthracite, an extremely hard type of coal that can be carved to a high, glossy polish. The sample comes from north-eastern Pennsylvania, the location of the largest coal field of its type in the world, where the brothers' maternal grandfather was a coal miner in the small town of Edwardsville. They were attracted to making works out of coal because of the way it brought together their family history; the folk tradition of miners sculpting anthracite; and current issues concerning climate change and resource extraction. The Dufalas are also showing an anthracite anvil, so pairing an object that speaks of the industrial revolution with one symbolic of our transition to an information economy. Klein points out that both objects can be implicated in global warming, as their manufacture 'depends on carbon: in the case of the anvil, it was coal used to stoke the iron furnaces of the nineteenth century, while many of the parts of an iPhone are made in China, which still generates most of its electricity from the burning of coal.' He adds that the museum has had an incredible problem with people picking up the i-phone: so strong does the instinct seem to be that a 'Do Not Touch' sign proved insufficient, and a barrier had to be put around it.

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Those telephonic materials also feature in Ed Burtynsky's photographs. Klein says he 'can think of several photographers who deal with resource extraction, but Burtynsky has been doing it the longest, and I was interested in his having taken the photographs of uranium and nickel mining relatively close to his home in Toronto – so he was looking at the landscapes around where he lived.' In the case of nickel, Sudbury - 250 miles north of the city – is the site of one of the largest mining regions in the world. 'It wasn't until 1751', says Klein, 'that nickel was identified as a separate element. The majority of the nickel on Earth is alloyed with iron in the planet's core, and the

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released prodigious amounts of sulphur dioxide and other contaminants into the environment, acidifying the soil and water and killing most of the vegetation in many locations.'



Klein ensured that some elements are dealt with by more than one artist, so that visitors can get different takes on them. Burtynsky also depicts an iconic site for the extraction of lithium, one of the lightest elements, created in the first moments of the Big Bang along with hydrogen and helium. 'Lithium Mines #2, Salt Flats, Atacama Desert, Chile' depicts from the air what appears to be pools of Caribbean-blue water, but they are evaporation ponds filled with salty brine brought up from beneath the salt flats of the Atacama, the driest non-polar desert in the world. Klein tells me that 'after eighteen months the brine is concentrated enough to contain a six-percent solution of lithium carbonate, which is then exported and refined into lithium metal for use in lithium ion batteries. Two million litres of water are evaporated for every ton

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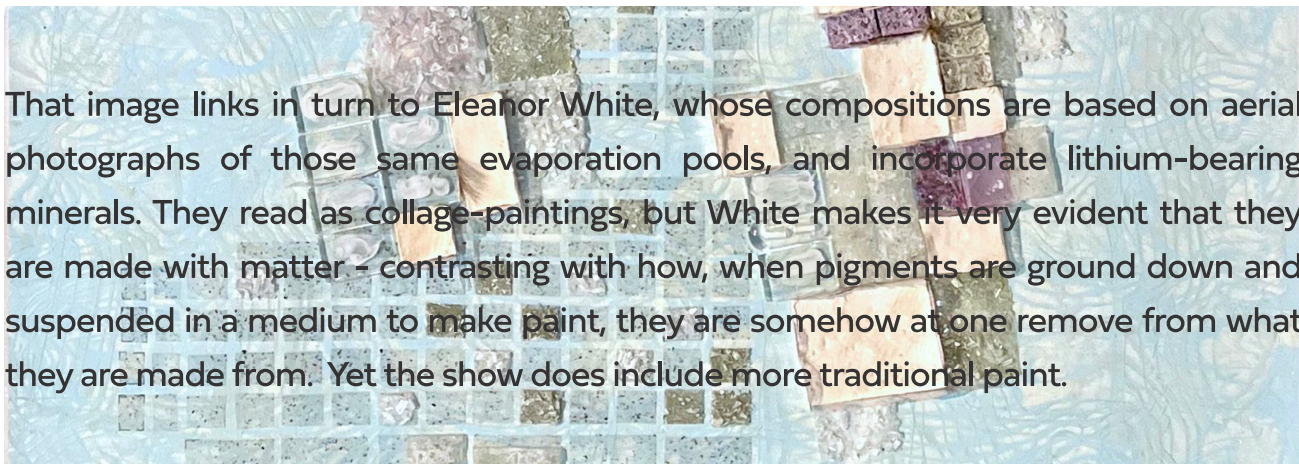
that by 2040 lithium production worldwide will need to increase more than 40 percent to satisfy demands for the metal.'

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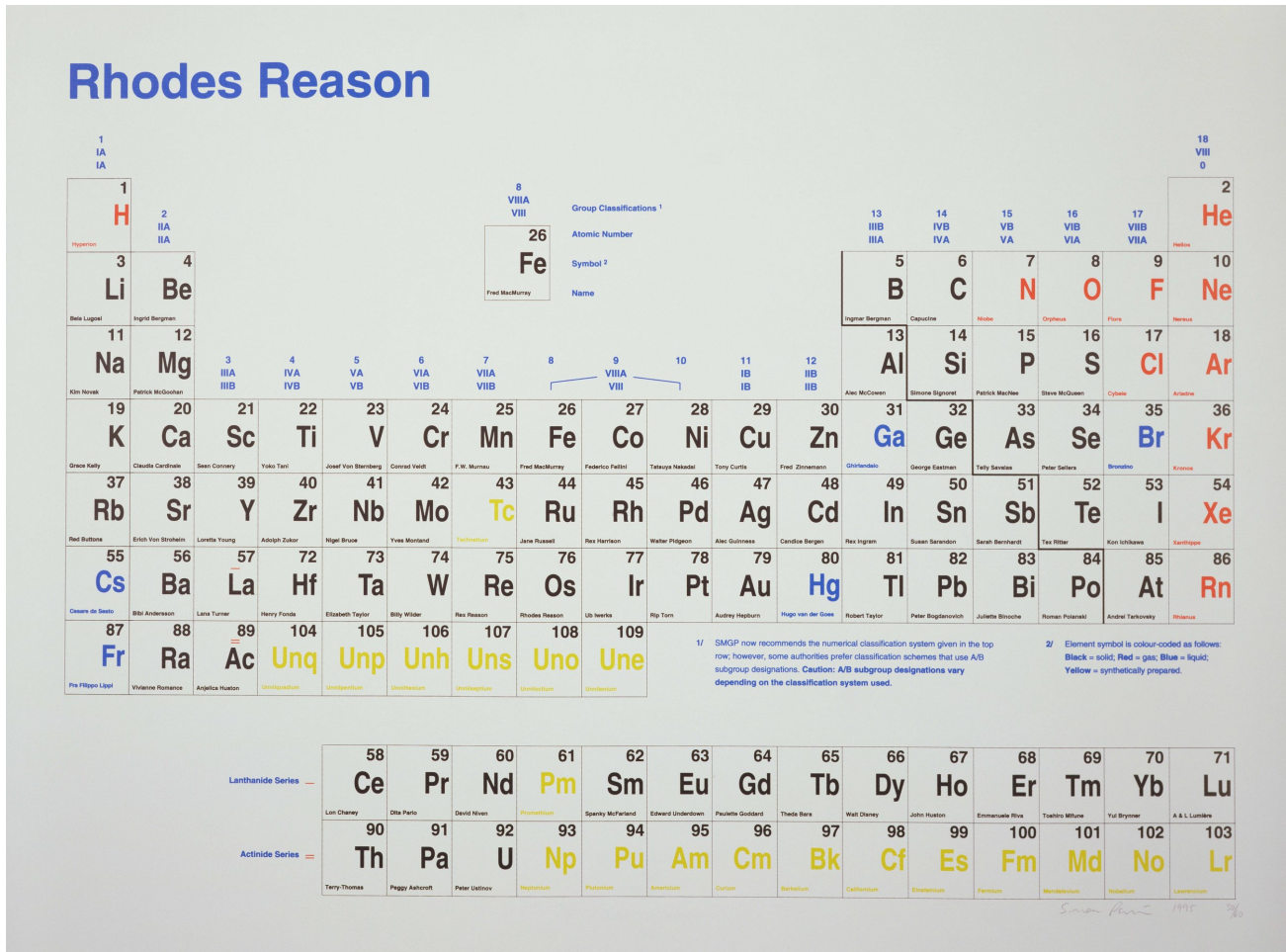
That image links in turn to Eleanor White, whose compositions are based on aerial photographs of those same evaporation pools, and incorporate lithium-bearing minerals. They read as collage-paintings, but White makes it very evident that they are made with matter - contrasting with how, when pigments are ground down and suspended in a medium to make paint, they are somehow at one remove from what they are made from. Yet the show does include more traditional paint.



Winston Roeth's primary subject is colour and its interaction with light and space, but materials are important to him. Roeth is 'old school', says Klein: 'he gets dried pigments and puts silica powder dust in with them to flatten the paint and suppress its reflectivity, then uses water-based polyurethane resin as a binder.' Klein emphasises that 'artists have played a huge part in the evolution of our understanding of the elements, and painters in particular were often at the forefront of experimentation and innovation with materials from the earth. Until the nineteenth

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example, was founded in 1832.' Here Roeth works with cadmium, discovered by the French chemist Nicolas Louis Vauquelin in 1794 when experimenting with crocoite, an ore of lead that also contains chromium. Further testing led to the finding that several of the compounds of the grey and brittle metal were strongly coloured, tending toward the red and yellow end of the spectrum; by the 1840's cadmium was being extracted and refined in commercial quantities, leading to its use as an artist's pigment. Here Roeth maximises the materiality and elemental presence of his colours by painting them onto slate.



Klein was also keen to include some works in the form of the periodic table. Simon Patterson is interested in laying one body of knowledge on top of another to generate new and surprising forms of meaning. He's done that most famously by replacing the stations on a London Underground map with the names of philosophers. In 'Rhodes Reason', the names of film actors and directors replace those of the solid elements;

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an element's abbreviation. For instance, Oxygen (O) has become Orpheus. Klein explains that 'Patterson's version of the table speaks of the development of language from simple naming through the association of objects or concepts with shared traits, paralleling the historical evolution from identifying separate elements to their eventual organization by shared properties in the periodic table.'

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The names given to the eras in human history – stone, bronze, iron, and now silicon – are indicative of how our understanding of matter has transformed culture, and

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installation by Robert Williams which imaginatively recreates an alchemist's workshop, and Peter Selgin's painting of periodic table formulator Dimitri Mendeleev as Moses – from the collection of neurologist and author Oliver Sacks, who was himself sufficiently obsessed with the periodic table to carry a copy of it permanently in his wallet. Selgin's Moses is delivering not the commandments but the periodic table, which many consider an outline of the fundamental laws that are the basis for creation.



Klein says he is especially drawn to Williams' shack, which positions alchemy as more than the stereotype of an obsessive quest for gold. The shack exists as a specifically designed, freestanding building in rural Pennsylvania: the contents have been disassembled and moved to The Aldrich, including hand-blown glass alembics as well as a selection of books, equipment, and tools that an alchemist might use. The speculations of alchemists in medieval Europe, the Islamic Middle East and North

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likes how alchemy operates metaphorically: for example the shack includes two skeletons engaged in the conjunctio, or sacred marriage, a symbolic sexual act representing the recombination of pure, separate substances into a new compound. Williams, says Klein, 'posits that alchemy, far from being dead, is still relevant as a poetic and magical way of looking at the world, sharing much in common with the making of art'.

All in all, then, 'Prima Materia: The Periodic Table in Contemporary Art' is a winning combination of education, science and entertainment, delivered through thought-provoking art.

'Prima Materia: The Periodic Table in Contemporary Art', is showing at The Aldrich Contemporary Art Museum from February 5 - August 27, 2023.

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