Out of Place

A British Mineralogy

Curatorial note from Chitra Ramalingam

At its height, the British Empire famously encompassed the entire earth. Less notoriously, it reached deep below the earth's surface. Mining and engineering in Britain and its former empire are associated with global histories of migration, inequality, and exploitation; with the transformation of terrain and with ecological disasters past, present, and future.

A British Mineralogy consists of mineral specimens from the Yale Peabody Museum (YPM) Mineralogy and Meteoritics collection, on display in the Long Gallery of the Yale Center for British Art. Many of these specimens are beautiful, but they are not displayed here as nature's works of art. They are displayed, instead, as migrant objects, their fates and journeys tied to the British colonial project.

Originally gathered from locations in the British Isles, southern Africa, eastern Australia, Sri Lanka, and western India, these objects were acquired at the Peabody from the mid-nineteenth to the early twenty-first centuries. Like the paintings on the walls around them, they have passed through British networks of power, knowledge, value, and exchange. Displayed "out of place" in the art museum, they offer an alternative to the visual narrative of Britain in the World in the Center's current public galleries.

These migrant minerals contain valuable materials, from the prosaic to the precious: graphite, tin, copper, diamond, and more. They were brought forth from the earth through the skilled labor of people whose lives became entangled with them and with the technological landscapes of extraction around them. Once unearthed, these specimens embarked on voyages across the globe, participating in the global flows of people and commodities that underlay British power in the period of high empire. Finally, they were assimilated into a natural history collection, where they shed some of their pasts in order to become emblems of nature, apparently outside of culture and history.

What kind of mineralogy might embrace and acknowledge these stories of excavation, translocation, and arrival, rather than efface them in the name of nature? The entanglements put forward here—the idea that a mineral specimen might bear the weight of a fragile British identity, that representations of mineral science might be enmeshed with commodification and the world of consumable goods, or that the mining and movement of minerals might be entwined with the movement of and migration of people—are not new.

A British Minerology is in part a response to British Minerology, the first major illustrated mineralogical publication in Europe, by the London artist and naturalist James Sowerby soon followed by its counterpart, Exotic Mineralogy. However, Sowerby frequently undermined his own proposed distinction between the British and the exotic. Both publications brimmed with suggestive elisions and ambiguities among the terms "British," "English," "empire," "native," "foreign," and "exotic." Both projects were limited solely to reproducing specimens held in London-based mineral collections, which depended, of course, upon networks of British travelers to distant lands. Even a meteorite—a piece of stone theorized to have fallen to Yorkshire from the heavens—was found to be worthy of inclusion as British, as was ice, snow, and hail. "What has been thought remarkable," Sowerby observed in the fifth volume of British Mineralogy, "is that this work should include so many subjects previously considered as foreign."

Inspired by Sowerby, but grappling with the legacies of a colonial art collection in our post-colonial moment, here we propose a different British Mineralogy. Text entries for each specimen use it as the starting point for varied histories of mining, engineering, resource extraction, labor, and migration in the British Empire. Each mineral has been illustrated anew by the contemporary Indian artist and researcher Garima Gupta, whose work engages the visual and ecological legacies of trade and migration histories in former colonial empires.

Together the text and the illustrations—developed collaboratively—engage in an exploratory practice of place-making, exploring the landscape from which the mineral has come, the political and social landscape through which it has traveled, and the surface of the object as a landscape of its own. The boundaries of locale and belonging and Britishness were drawn in a particular and peculiar way by Sowerby in 1804. Today, the Peabody draws these boundaries quite differently than we do at the Center; so too would a present-day UK immigration officer. In arraying these migrant minerals in an art museum under the uncomfortable rubric of A British Mineralogy, we ask : where are they really "from"? If they can never go "back," where do they belong, and why does it matter?

About the Curator

Chitra Ramalingam is Associate Curator of Photography at the Yale Center for British Art, and Lecturer in Yale's History of Science and Medicine Program. After a PhD in History of Science from Harvard University, she held research fellowships at the Science Museum, London and the University of Cambridge before arriving at Yale. Her research, teaching, and curatorial work focus on British photography, on the visual and material culture of Victorian science, and on decolonial museum practice. She is author of To See a Spark: Experiment and Visual Experience in Victorian Science (under contract, Yale University Press),and co-editor of William Henry Fox Talbot: Beyond Photography (Yale University Press, 2013).

About the Artist

Garima Gupta is an Indian artist and researcher based in New Delhi whose work engages with colonial iconographies of nature in order to explore the environmental history of South Asia and Southeast Asia. Her drawings grapple with the visual and ecological legacies of trade and migration histories in the former British empire. She layers archival imagery and documents into the work in order to merge the historical with the contemporary, the cultural with the natural.

Apophylite with stilbite

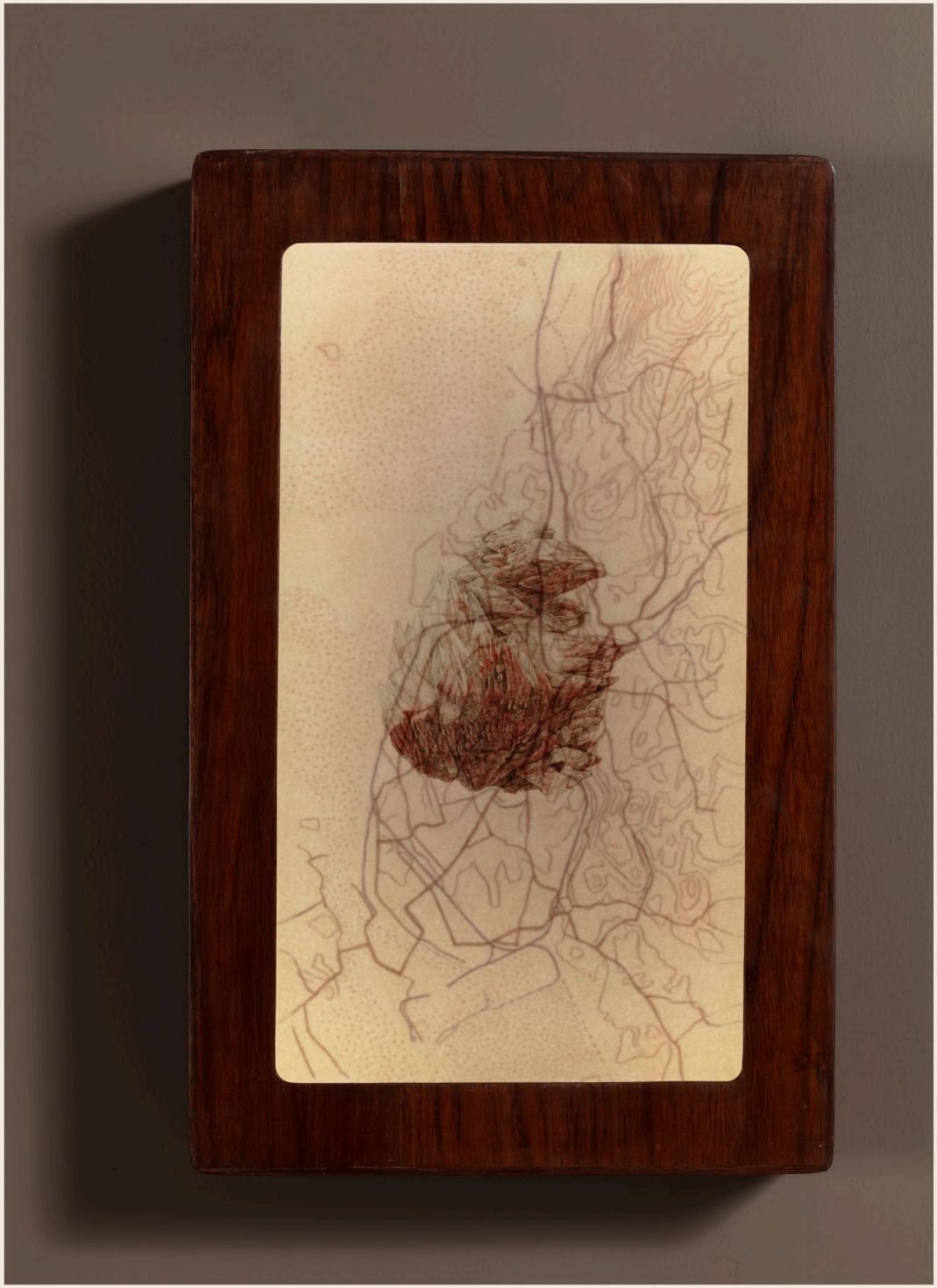
Western Ghats, India

1. Graphite, colour pencils on Archival paper, . 2. Red lead pencil on Gateway paper
3. Graphite Gateway paper. 4. Rice paper - inside a lightbox

Three individual layers of drawings merge into one as light permeates through them - 1. a drawing of an apophyllite crystal excavated from Bhor Ghat railway line, 2. symbols and patterns from Figure 2. Railway lines through the Western Ghat listed in a paper by Ian Kerr. 3. A grid made in red lines.

In order to trade Indian commodities like cotton, opium, sugar, the British needed to connect the rich resources of the Indian interior to the port city of Bombay. In between the British and their fervour for trade stood basalt rock of the Western Ghats. Between 1856-1863 these mountains were blasted through erosion-furrow to make tunnels for railway lines. It was here in Bhor Ghat that resting within the largeness of dark Basalt were hundreds of large jewel crystals - findings that remain the world's most spectacular examples of zeolites, a kind of crystal only formed in volcanic trap rock.

A few dashes, a pattern of diagonal lines, a line interrupted by dots, cross markings, shaded areas of greys - an abstract modality to read topographies - maps. This drawing explores the very idea of reading a rock, mineral, land through the eyes and the language of a coloniser. Placed as the middle layer within this set of drawings - hazy, fairly unreadable, stripped of its 'map-ness', however, the eye still decodes this abstraction as a map. These markings that alter topographies - who gets to draw them, who consumes and who labours and dies here?



Calcite with Hematite coating

Stank Mine, Cumbria, England

1. Graphite, colour pencils and Archival paper 2. Colour pencils on Gateway paper
3. Rice paper - inside a lightbox

Red lines of varying grades and thickness trace the railway lines, transport roads and motor roads from the ordnance survey map of Barrow in Furness while a drawing of Calcite with Hematite coating sits in front, their reds welded together.

Iron was the metal upon which the industrial revolution was based, and it was in the mid-nineteenth century that iron mining reached astonishing peaks. The iron mines of Cumbria, from which came this calcite specimen dusted with red hematite--had the richest hematite in the country. The Barrow ironworks churned out 1,100 tons of steel railway track a week - dotting and lining the topography with railroads and motorways.

Shades of oxidised iron make marks of varying degree into the derma of the paper - like bruises made from hunt for the ore on land. The two layers of this drawing deliberate on the contrast between the ore and minerals, one a dense concentration of mineral in a rock and other a delicate crystalline structure. While they occur side by side, the ore laid rail tracks and the crystal was encased in felt lined boxes in collections.

Cassiterite

Cornwall, England

1. Graphite on Archival paper, 2. Graphite on Copier paper 3. Colour pencils on Gateway paper
4. Rice paper - inside a lightbox

In this layered drawing, an outline of pressed bell-shaped flowers of Cornish heather, a museum card file with original Blum label of specimen no. MIN.058430, and a drawing of Cassiterite mineral sit together - asking what happens to topographies once they have been rummaged empty, layers of sediments displaced, and the shiny contents amongst them displayed.

Tin, one of the earliest metals known to humankind, has been mined, smelted, and traded in Cornwall for thousands of years. Its main ore mineral is cassiterite, a dense black material that occurs in veins on the edges of the region's granite moorlands. Cornwall was one of the first regions of Britain to de-industrialize with the gradual collapse of its mines starting in the mid-nineteenth century. Small scale mining however continued in Cornwall until the 1990s, and has left a long-lasting legacy of contamination throughout the Cornish landscape: ruined engine houses and chimneys, derelict industrial land, soil and water contaminated.

In this work, two elements - a dried flower of heather and museum label of the mineral - partially eclipse and divert the eyes away from the mineral. These refer to the thick, overgrown blankets of beautiful heather flowers and distinctive wildlife ecologies that now cover Cornwall's contaminated estuaries and its immense spoil heaps.

Cassiterite

New England Mine, New South Wales, Australia

1. Colour pencils and graphite on Archival paper, 2. Graphite on Tracing paper
3. Rice paper - inside a lightbox

Part of an archival glass plate negative titled 'Hydraulic sluicing' by Kerry and Co from the Powerhouse Museum is hazily reproduced here in shades of grey. Above that sits a drawing of the Cassiterite specimen from the New England Mine in New South Wales.

Sluicing was a form of mining that used high pressure jets of water to break up loose alluvial hillsides. After the soil was turned into a slurry with water, it was channelled downhill into sluice boxes where minerals were caught on "riffles". Sluice mining was used in NSW to find gold at Kiandra and Adelong, and tin at Tingha and Watson's Creek. It had a considerable environmental impact, including soil erosion, diversion of water courses and destruction of local vegetation and biodiversity.

This work represents the very act of sluicing - a mineral looks as if lifted out of a watered down site/terrain. The washed off reproduction of the glass plate negative of the sluicing site corresponds to large folds of lands that are overturned, pulverised and filtered out for profit. While the ores are used in industries and the minerals sits in museums, the sites, their ecosystems are left for ruin.

Native Copper with Cuprite

South Caradon Mine, Liskeard, Cornwall, England

1.Graphite and colour pencils on archival paper, 2. Graphite and Sanguine powder on Gateway paper
3. Rice paper - inside a lightbox

A mangle of wires dusted with copper tones sits behind the drawing of cuprite encrusted Native Copper from South Caradon Mine.

South Caradon mine opened up right at the end of the copper boom - at the moment when most of region's copper mines were closing as their reserves were exhausted and as massive copper deposits in the Americas flooded international markets. At this junction of time, it is very likely that the copper from England would have been mixed with copper from other sources to lay transatlantic telegraph cables. Encased in Chatteron's compound (a mixture of gutta percha, rosin, and tar) harvested from Southeast Asian rainforests— copper in these telegraph cables would have snaked across the ocean floors to carry power and information across vast distances.

Gibeon Meteorites

Amalia Farms, Gibeon, Namibia

1. Graphite, colour pencils on Archival paper, . 2. Red lead pencil on Gateway paper
3. Graphite Gateway paper. 4. Rice paper - inside a lightbox

Two distinct patterns interlace in this drawing a) Widmanstätten pattern, a delicate interlocking of bands of iron and nickel crystals that can only form over millions of years of slow, unearthly cooling, appearing only on certain meteorites b) a criss-cross pattern made with wildly unruly lines suggesting migration of these meteorites - hurling in space to collision with earth to felt lined drawers of temperature regulated collections.

The Gibeon meteorite field, centered near the village of Khaxa-tsûs in what is now Namibia has one of the widest distributions of any known group of meteorites on earth. Its strewn field—the area where meteorites from a single fall are dispersed—covers an elliptical area 275 km long, 100 km wide. No fall was ever recorded or traced in local oral traditions, so it is believed to have fallen in prehistoric times. Over one hundred fifty Gibeon fragments are now scattered across southern Africa, Western Europe, and North America. Prized by twentieth-century collectors seeking Gibeon's unique etch pattern, they were further dispersed by an active meteorite market.

Among the forces that act on matter in order to give it a unique form are also the forces of will, reverence and want that our species brings to the mix. If the Widmanstätten pattern is made by extreme temperatures, pressure and interstellar collisions, then what we draw in time might look very similar to a hashing of lines, intersecting, dense, suffocating, trampling - making distinct marks, nonetheless. This drawing is exploration of these two patterns.

Diamond

Kimberley Mines, Northern Cape, South Africa

1. Graphite on Archival paper 2. Blue paper cut-out 3. Rice paper

Constructed by layering, the blue haze of the paper cut-out behind the drawing represents the "Big Hole" in Kimberley - a 215-meter deep pit, hand dug by around fifty thousand mine workers to excavate diamonds. After the mine's closure in 1914, the Big Hole got flooded and became a marketed tourism site. This blue shape encompasses the drawing on the front - three Kimberlite rocks in which diamonds are found.

Kimberley mines were the place where modern day diamond mining was consolidated and industrialized, and eventually fully monopolized by De Beers by the late 1880s.

Molybdenite

Kingsgate Mines, New South Wales, Australia

1. Graphite on Archival paper 2. Graphite and colour pencils on Gateway paper
3. Rice paper - inside a lightbox

A scatter of M's within red circles sit on a hazy field of dots and dashes here. On the Map of New South Wales, Department of Lands, 1915, these red circles with the letter 'M' indicated presence of molybdenite - a star mineral that rose to importance with the war and disappeared into oblivion as wartime contracts ended. A drawing of Molybdenite from Kings gate mines overlays this field of M's.

There are many pipes and veins of molybdenite spidering through the granite masses of the New England Mountain range in southeastern Australia, and the Kings gate mines where this specimen was collected sometime before 1930. Molybdenite is a soft, dark material with a showy metallic luster - its attractive qualities as an aesthetic object however belie its function as a fully militarized resource. During the outbreak of the First World War, Molybdenum steel was found to be exceptionally useful. This highly heat resistant mineral was used for manufacturing gun barrels, armor plating, and parts for tanks, missiles, aircraft, and submarines. With the war ending, production of molybdenite ceased completely around 1930.

Graphite

Sri Lanka

1. Graphite on Gateway paper 2. Graphite on Archival paper 3. Rice paper inside a lightbox

In the two layers that form this drawing, the first layer draws out the topographic surface of the graphite mineral, while the second layer erases it in order to mark its territory.

A thousand shades of green on the outside, brittle, opaque, metallic luster of the within. The island of Sri Lanka became a Crown Colony in 1815, and graphite quickly became its key mineral resource. Graphite's astonishing stability at high temperatures, pressures and its electrical conductivity made it a profitable mineral in the early twentieth century. Mined by Sinhalese men, women, and children, the mineral profited the crown greatly.

This drawing is an exercise in reading a mineral's topography. Looking closely into its folds and cavities, valleys and curvatures is knowing that it is but a part of a largeness that it once belonged to - a landscape within a landscape. Removing parts of this drawing is documenting its rupture.

Out of Place artworks displayed at *Event, Memory, Metaphor* at Tarq, Mumbai. 2022

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