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Decolonising Manchester Museum's mineral collection – a call to action

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Abstract

The history of Black and Indigenous peoples, and the role of empire in most museum natural history collections is largely unresearched and not acknowledged in displays. This study analyses the reach of empire in Manchester Museum's mineral collection, uncovers colonial stories, and exposes structural racism in the museum sector. New data analysis of the mineral collection reveals that 24% of the collection comes from countries that were previously colonised. 50% of the Museum's minerals from the British Empire are Australian, of which 33% came from the Imperial Institute. A new mineral display gave opportunity for focussed contextual research into South African gold ore and Sierra Leone diamonds. Archive photographs from the early 1900s are used in the display to tell the story of the people who mined the Museum's South African gold ore specimens. Recent research and the Museum's Sierra Leone diamond are used to tell the story of diamond mining today and the colonial legacy.

Institutional approaches, whereby time and resources are not committed to researching colonial histories and complex colonial stories, mean that these histories are not researched and do not get past exhibition editing process, meaning this practice continues. This paper is a call to action to change this.

Keywords: Minerals, Manchester, Decolonisation, Empire, Gold, Diamonds, South Africa, Sierra Leone

Introduction

"We, collectively as museum professionals need to better acknowledge past wrongs for what they are, and tell the whole story of science." (Das and Lowe, 2018: p.11). This paper is an attempt to address this and take the first steps in decolonising Manchester Museum's mineral collection. This research aims to begin to reveal the true extent of the role of empire in the Museum's mineral collection, uncover hidden stories and identify potential structural racism in the museum sector.

Manchester Museum is part of the University of Manchester and has a collection of over 4.5 million

objects. The collection has evolved through time, with different roles and influences. The original collection was put together as a gentleman's cabinet of curiosities by John Leigh Philips (1761-1814). It continued to be a status symbol and a source of enjoyment for the learned in Manchester as it became the core of the Museum of the Manchester Natural History Society collection in the 1820s. By the 1830s it had broadened its audience to 'provide cultural and educational opportunities for the 'lower orders' of society' (Alberti, 2009: p.17). The Natural History Society's collection was subsequently joined by that of the



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Manchester Geological Society to make a combined museum. In the late 1860s, after difficulties experienced by the societies that ran the museum, the collections and assets were transferred to Owen's College (the forerunner of the University of Manchester). A new museum building was constructed at the University and the Museum's educational remit was broadened to include teaching university students.

Manchester Museum's collection has mostly arisen from gifts, transfers (for example from Salford Museum and the Imperial Institute) and some active collecting. Substantial gifts of collections in the early years of the museum coincided with the height of the British Empire and the collection inevitably reflects this. 'It may not have been initiated by the nature and culture of empire, but the Manchester Museum was certainly consolidated by colonial material' (Alberti, 2009: p.94).

There is undoubtedly a new momentum towards decolonising museums, highlighted for example in the report 'The Restitution of African Cultural Heritage. Towards a new Relational Ethics' (Sarr and Savoy 2018, also known as the 'Macron Report') and the National Trust's statement 'Addressing the histories of slavery and colonialism at the National Trust' (The National Trust, 2020). Some museums such as New Zealand's Te Papa (Henare, 2004) have been changing their approach to their colonial past for some time, embedding biculturalism and sharing power with *Māori people at all levels*.

Decolonisation has focussed on ethnography collections and more recently, museums have taken

the first steps that go some way to redress their colonial past (including Manchester Museum, who repatriated human remains in 2003 and secret, sacred and ceremonial objects in 2019). Many historic specimens in natural history collections were transported on trade and slave ships, and were a legacy of attempts to map, tame and exploit the British Empire (Ratcliff, 2016; Das and Lowe, 2018).

Manchester Museum's collection of over 20,000 minerals (Appendix I) provides an opportunity to investigate some of the hidden stories of Black and Indigenous peoples and the role of the British Empire in shaping the collection.

In-depth analysis of Manchester Museum's mineral collection

Most museums in the western world could uncover backstories showing how individual objects were acquired as a result of empire building, but does the collection in part represent evidence of a concerted effort to map the resources of empire? Every mineral specimen in Manchester Museum's collection has a comprehensive catalogue record, though it is worth noting that the documentation does not include the role of Black and Indigenous peoples anywhere in the collection.

24% of the mineral collection is from countries who were part of British or other European empires when acquired (Figure 1), just over a third are from other countries and 41% are from the UK and Ireland. Comparable data for similar collections has not yet been published, so staff at other museums were contacted for details. Leeds and Sheffield Museums, The Royal Albert Memorial

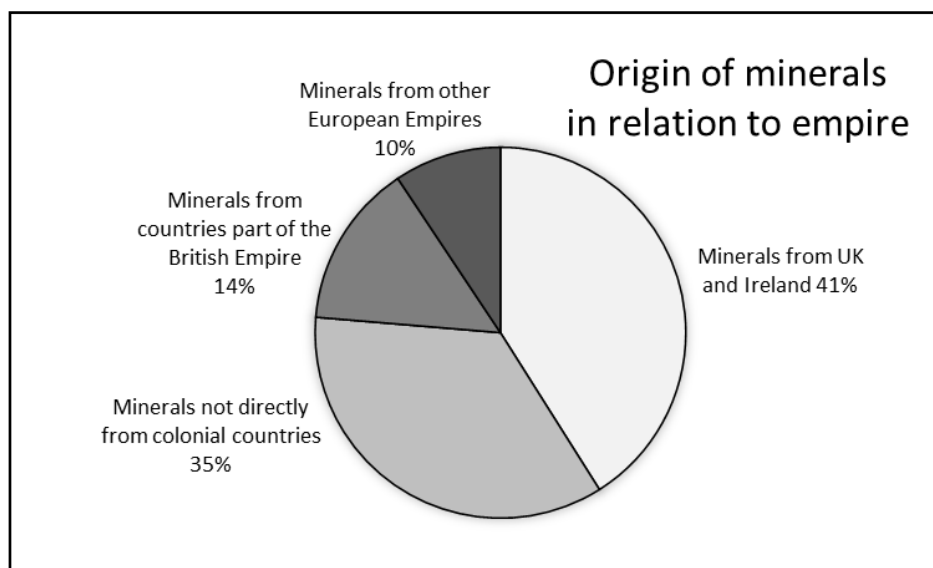


Figure 1. The percent of mineral specimens collected at Manchester Museum, from the UK and Ireland, countries of different former empires and elsewhere.

Museum, Exeter and the Sedgwick Museum either did not have the specimen data or were unable to undertake the data analysis. Staff at Bristol Museum supplied the following data: of the 13,191 minerals in the collection (of which 4051 have no locality data), 17% are from countries who were part of British or other European empires when acquired and 63% are from the UK and Ireland.

A third of the minerals from former European empires (excluding British Empire countries), are from Chile (Figure 2.A). Approximately ten percent come each from the Faroe Islands (55 of the 149 specimens were collected by Caroline Birley), Mexico, Brazil and Bolivia respectively. The remaining 26% of the collection comes from 33 other countries.

Fifty percent of the minerals from countries of the former British Empire at Manchester Museum, are from Australia (Figure 2.B). A further 20% come from Canada, 8% from India and 7% from New Zealand. 29 other countries, formerly part of the British Empire are represented in the collection.

The particularly high number of minerals from Australia compared to other British Empire countries, begs the question why? For example, did a collector have a particular work, or personal interest in Australia and focussed their collecting there, did they have particular interest in a mineral associated with Australia, such as opal, or were particular minerals coming in abundance from Australia at the time?

Of the 910 Australian minerals in the collection at Manchester Museum (Figure 3 and Appendix II), 33% were given by the Imperial Institute (accessioned in 1914), 14% by David I. Green (Keeper, then Curator of Mineralogy at Manchester Museum 1992-2010, specimens primarily collected himself), 9% by Henry Francis Harwood and the rest donated by 63 other donors or the donor was not recorded.

The Imperial Institute was founded in 1887 to commemorate Queen Victoria's jubilee. The main idea behind the Institute was for it to be 'a centre and clearing house for information investigation and exhibition of the natural resources of empire' (Furse, 1926). In specific reference to minerals, its work was described as '(a) intelligence and publications, (b) laboratory investigations, and (c) legal'. The Imperial Mineral Resources Bureau was amalgamated with the Imperial Institute in 1925 and The Imperial Institute became the Commonwealth Institute in 1958 (Louis, 1917; Wintle, 2013).

The transfer of minerals from the Imperial Institute to Manchester Museum was probably part of the Institute's efforts to reframe the collection and a shift from the original colonial objectives. 'It was against the backdrop of these political and economic negotiations that the Imperial Institute reinvented its purpose and forged its future' (Wintle, 2013: p.187). Staff began to talk about the political change in their displays and were encouraged to share curatorial power with people from the

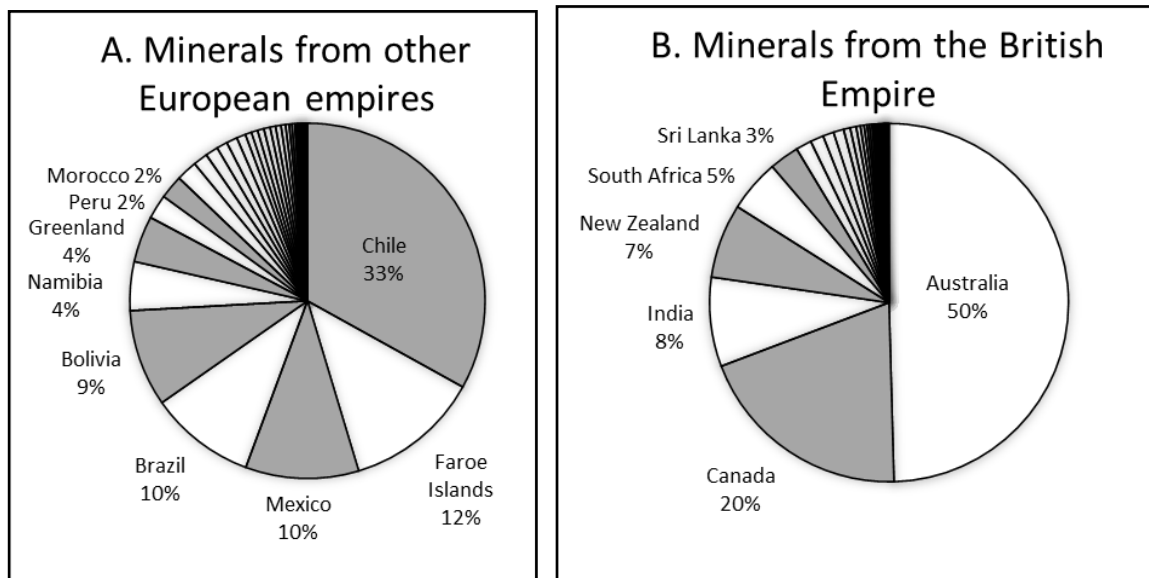


Figure 2. A. The percent of minerals at Manchester Museum, from countries of former European Empires in the collection, excluding British Empire countries. B. The percent of minerals from countries from the former British Empire. Only countries which account for 2% or more of the collection are labelled (see Appendix I for full list).

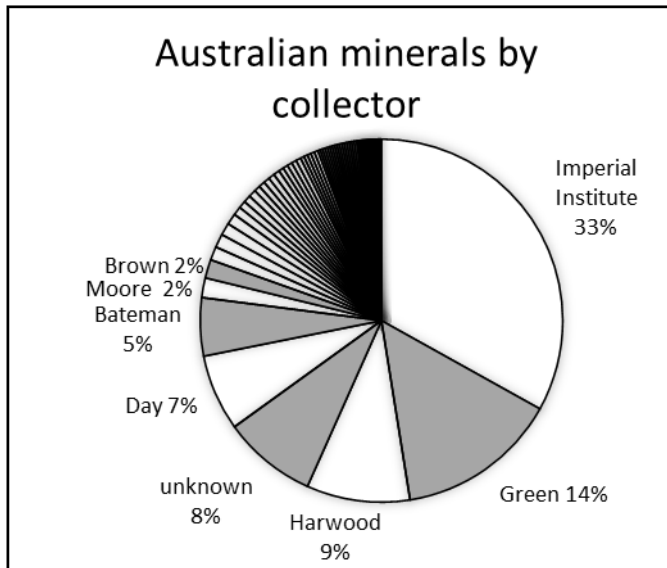


Figure 3. The percent of Australian minerals at Manchester Museum, from different collectors. Only countries which account for 2% or more of the collection are labelled (see Appendix II for full list).

countries they were displaying. It is worth noting that the Institute continued to collect ethnographic objects from across the British Empire and Commonwealth during this time (Wintle, 2013: p.187).

The Museum’s Australian mineral specimens represent a broad range of 170 different mineral species (Appendix III). 26% of specimens are ore samples, 8% cassiterite (tin oxide) and 6% galena (lead sulphate), all other minerals represent 2% or less of the total collection. 193 (82%) of the 234 ore samples came from the Imperial Institute.

Uncovering the history of gold and diamonds for display

Manchester Museum reinterpreted some of its minerals in a gallery and online public display in February 2020. This was an opportunity to undertake new research and take a decolonial approach.

The history of South African gold mining

The Museum’s collection contains 75 minerals from South Africa, fifteen of which are gold. None of them have been on display for at least 25 years, some of them not at all. The Museum has never previously told the story of the people who mined the gold now in the collection. It was decided to focus on specimens from the Crown Mines (Figure 4) and Robinson Mine (Figure 5) as they had good locality data and illustrate both gold mining and processing. Although the specimens were catalogued at different times, they were probably both collected in the early 1900s and accessioned during the retrospective documentation projects.

South African gold mining and processing in the early 1900s, was labour intensive (Table 1). The majority of the workforce were Black African migrant workers (described as ‘Natives’ in Table 1), who were housed in barracks at the mines away from their home ‘reserves’ (Scott, 1951: p.575).



Figure 4. Gold ore specimen from South Reef, Crown Mines, South Africa (MANCH-N.2446), donated by J. G. Spencer, accessioned 1950. © Manchester Museum, University of Manchester.



Figure 5. 'Crushed auriferous Quartz-rock (a) before (b) after Cyanide process' Robinson Mine (MANCH-N.2117 and MANCH-N.2118), donated by R. Harrison, accessioned 1914. © Manchester Museum, University of Manchester.

White workers took the skilled supervisory roles, with opportunities for advancement, high wages, and relatively good living conditions; Black workers were left with the unskilled roles that paid an eighth of White salaries and suffered harsh living conditions (Thompson, 2000). The Black African workers came from a wide range of backgrounds such as Indigenous Khoisan people and enslaved people from Indonesia, Madagascar and tropical Africa, though the majority of miners were from the Sul de Save, Mozambique (van Onselen, 2019: p.41).

The annual reports of the South Africa Chamber of Mines (a South African mining industry employer organisation), show that in the first 30 years for the twentieth century a total of 93,000 African miners died of disease on the Witwatersrand gold

field and 15,000 miners died during work-related accidents (Smith, 1993). Silicosis (silica-dust induced scarring of the lungs) and Tuberculosis were commonplace (Katz, 1994).

By 1908, 12% of the Rand Gold Mines workers were indentured Chinese people. Strong opposition to their presence from the White community meant there was compulsory repatriation after three years of labour. Between 1904 and 1910, over 63,000 Chinese miners were brought in to work on South African gold mines (Yap and Leong Man, 1996).

The racial mix of South African gold miners was high-profile in British newspapers in the early 1900s (e.g. The Manchester Guardian, 1904). The 'Chinese labour question', also referred to as

Table 1. 'Average number of employees on the Rand Gold Mines*						
* Compiled from annual reports of the Witwatersrand Native Labour Association 1898-1948 and of the Transvaal Chamber of Mines.' (Reproduced from Scott, 1951: p.575.)						
	1898	1908	1918	1928	1938	1948
Europeans	9000	17,593	22,632	21,341	38,021	36,403
Natives	88,411	140,304	179,276	194,538	298,552	271,399
Chinese	-	21,027	-	-	-	-
All races	97,411	178,924	201,908	215,879	336,573	307,802

'Chinese Slavery', played an important part in the defeat of the Conservatives in the landslide victory for the Liberals in 1906. Many voters objected to poor treatment of the Chinese labourers and suggested that white emigration of the British unemployed to South Africa could have filled these jobs instead (Taylor, 2005).

Using photographs contemporary to the collection

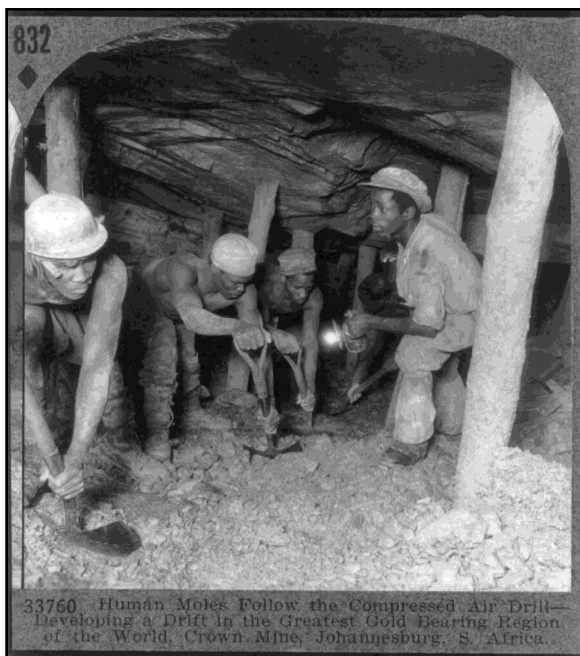
One of the challenges of putting together a museum display, is that space is limited and most visitors do not want to read text-heavy labels. Complex and uncomfortable stories can be difficult to tell, so it was decided that photographs would be a powerful approach to tell the story of how the gold was acquired. Contemporary photographs of gold mining at Crown Mine (Figure 6), gold processing at Robinson Mine (Figure 7) and gold mine labourers (Figure 8) were found in the United States Library of Congress archive. There was no interpretation of these photographs beyond the descriptive catalogue information.

'Gold mining at Crown Mine' (Figure 6) shows four miners shovelling gold-bearing rocks (following being broken up by an air-drill), a fifth holding a light. They are tightly packed amongst wooden props holding up the roof, though this was not unusual in miners at the time. The miners' safety

was probably not a high priority, with only one of the five wearing a protective hard hat, the others wear cloth ones. There is no hearing protection or protection from breathing in the mine-dust. The effects of the heat from being deep underground and manual labour are clear to see, with two of the miners having removed their upper clothing.

The 'Quartz Sorting Table, Robinson Deep Mine, Johannesburg, South Africa' (Figure 7) shows African migrant workers selecting pieces of the newly mined gold-bearing quartz conglomerate. They have no safety equipment, not even gloves to protect their hands on the jagged rocks, still a characteristic of the rocks in the collection today. After this, the ore underwent crushing, heating, extraction using a cyanide solvent and electrolysis. Central to the photograph is a white European overseer. He has a hat with a brim, probably more expensive to buy which may reflect a higher income.

Figures 6 and 7 form part of the collection of The Keystone View Company, who produced lantern slides and stereographs as educational resources for American elementary schools between 1892 and 1972. They were highly regarded and widely used (Getchell, 1912). All of the photographers were anonymised by the company (Gleason, 2018).



33760. Human Moles Follow the Compressed Air Drill—Developing a Drift in the Greatest Gold Bearing Region of the World, Crown Mine, Johannesburg, S. Africa

Figure 6. 'Human moles follow the compressed air drill - developing a drift in the greatest gold bearing region of the world, Crown Mine, Johannesburg, S. Africa', about 1910. Original copyright, The Keystone View Company No. 33760, now in the public domain. Available at: <<http://hdl.loc.gov/loc.pnp/cph.3b09058>> [Accessed 29 April 2020].



11977—Quartz Sorting Table, Robinson Mine, Johannesburg, South Africa.

Figure 7. 'The 'Quartz Sorting Table' Robinson Mine, Johannesburg, South Africa', 1901. Original copyright, The Keystone View Company No. 11977, now in the public domain. Available at: <www.mindat.org/photo-879926.html> [Accessed 29 April 2020].

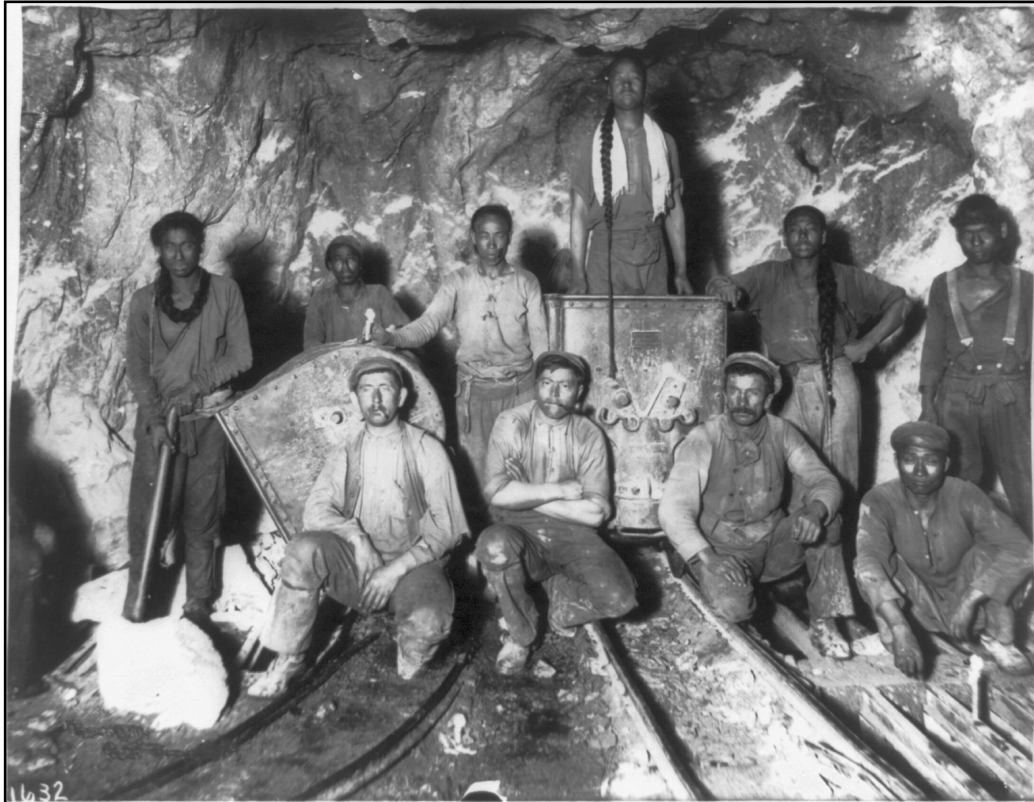


Figure 8. 'Black, Chinese and White labourers in a gold mine in South Africa', around 1910 Frank and Frances Carpenter Collection (Library of Congress), LOT 11356-39. Available at: <www.loc.gov/pictures/resource/cph.3a40984/> [Accessed 29 April 2020].

The third photograph used to tell the story of the South African gold mining (Figure 8), is from the Frank and Frances Carpenter collection at the United States Library of Congress archive. The photographs were produced and gathered by Frank G. Carpenter (1855-1924) and his daughter Frances (1890-1972) to illustrate his writings on travel and world geography (Library of Congress, 2010). The photograph shows ten gold miners at the end of a mine tunnel next to two mine carts (called a cocopans in South Africa), on narrow-gauge rails. Five of the miners (on the back row) are Chinese, three of which proudly show their long plaited hair worn in a queue. One of these miners is holding a wooden-handled tool, probably a shovel. The two miners on the right are Black migrant Africans, both wear hats, one with a brim. The three White European miners on the front row, have moustaches, one is smoking a pipe, another a cigarette, probably reflecting the cultural norms of the time.

In contrast to the other photographs, this one is posed with the men not working. Everyone is facing the camera looking relatively relaxed, rather than undertaking work. It is not clear exactly what their roles are in the mine, how these might split along

racial lines, or how representative they are of other miners.

The Sierra Leone Diamond

Sierra Leone diamonds are found near the surface. The diamonds eroded out of their kimberlite host rock in the Yengema- Koidu and Tonga areas of eastern Sierra Leone and deposited in river gravels in the Bafi-Sewa and Moa river systems (Hubbard, 1983). The alluvial deposits formed relatively soft conglomerate. The geological setting means that it is possible for small-scale diamond miners to dig shallow holes in the ground to find the diamonds.

In contrast, most economic diamond mining in Africa today extracts the diamonds from hard, igneous kimberlite host rock. Kimberlite forms under extremely high pressure in volcanic pipes deep underground (Keith, 1978). The mines follow the near-vertical pipes down underground in search of the diamonds (e.g. the De Beers Jwaneng diamond mine, Botswana is 625 metres deep) and as a result are owned by large corporations, who are able to fund these large-scale operations, usually in partnership with government.



Figure 9. Diamond in conglomerate host-rock from Sierra Leone (MANCH-N.19336.69), R. A. Howie collection. © Manchester Museum, University of Manchester.

Manchester Museum acquired its Sierra Leone diamond in 2013 (Figure 9). The specimen was part of the personal collection of Robert Andrew Howie (1923-2012), previously kept in a china cabinet in his living room. Howie was a mineralogist (Bridges, 2012) and co-author of the widely used student textbook 'An introduction to the Rock Forming Minerals' (Deer, Howie and Zussman, 1992). Manchester Museum acquired the collection of 650 minerals from his sons after their father's death. Most of Howie's minerals, though high quality had little associated information and his sons were not

able to provide further details; so through a process of curation and identification of the collection, it was a matter of trying to piece together information from what clues were available.

The Sierra Leone diamond was in a box with a hand-written label 'DIAMOND in conglomerate Sierra Leone purchased ex. W.T.G. collⁿ 1952' (Figure 10). After several internet searches, it became obvious that 'W.T.G.' was short for William Thomas Gordon (Figure 11); a palaeontologist based at King's College, London who was also a respected diamond expert, called upon by Hatton Garden diamond dealers to authenticate their diamonds (Campbell Smith, 1952 and Woolridge, 1951). Gordon travelled widely, so he may have acquired the diamond himself on a visit to the country, though the details of those who mined it were most likely never recorded. It must have been collected between 1930, when diamonds were first discovered in Sierra Leone (Frost, 2012) and 1950 sometime before his death. Gordon published on Sierra Leone diamonds in 1945, it is not known if he specifically chose it, but the article was printed in the journal the 'Bulletin of the Imperial Institute' was part of the infrastructure of the British Empire (Furse, 1926).

In 1935, a diamond mining monopoly was granted by the British colonial authorities to the Sierra Leone Selections Trust Ltd (SLST), incorporated in London (Frost, 2012: p.34). The SLST were required to pay £7000 a year in rent and a 27.5% tax on profits, but were exempt from all other taxes such as export tax. The remaining profits were split between the UK government and SLST. In 1955, the SLST's operations were reduced to 450 square miles with the rest of the rights coming under government control, allowing artisan small-scale diamond mining to begin. Sierra Leone gained independence from Britain in 1961 and in 1970, the SLST amalgamated with the government mining

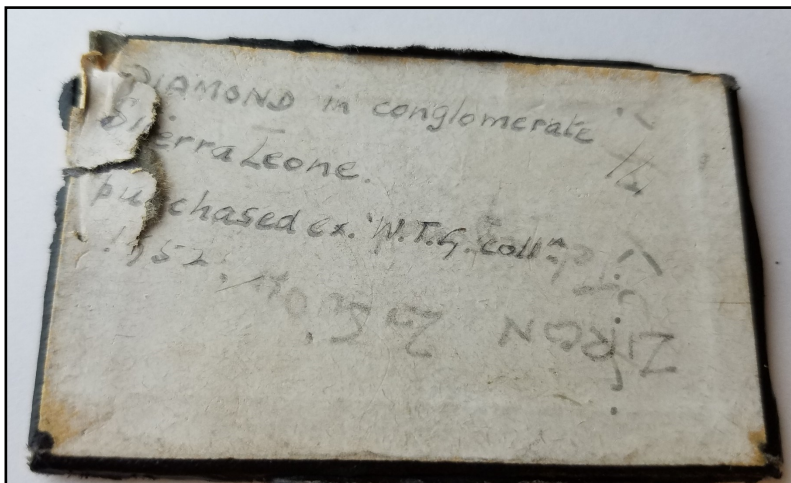


Figure 10. Hand-written label with the Sierra Leone diamond. © Manchester Museum, University of Manchester.



Figure 11. Professor W. T. Gordon (right) with Professor P. G. H. Boswell, (left) and I. S. Double on a field excursion about 1927. © University of Liverpool Library (reference D4/112).

division to recoup more tax. The SLST was compensated for the amalgamation with £2.55 million of government bonds (Frost, 2012: p.53).

Three years after independence, the Sierra Leone government took out a loan from International Monetary Fund (IMF) of USD \$10 million to develop its infrastructure (Bhatia et al, 1969). The loan was subject to strict conditions with payments linked to specific goals based on foreign reserves. These links, amongst other things, forced the country to devalue its currency in 1967 after Britain devalued the pound, reducing expenditure on infrastructure.

Development in Sierra Leone has been hindered over the decades by poor governance, corruption, a reliance on foreign investment, and payment of the IMF loan (Frost, 2012). It descended into Civil war in 1991 and diamonds were a key battleground (Frost 2012: Chapter 2). Many of the problems remain today ‘...and despite having an abundance of mineral wealth, the story of Sierra Leone has been a continuous cycle of debt and aid...’ (Frost 2012, p.178).

The Museum’s new mineral display provided the opportunity to illustrate its Sierra Leone diamond with recent research on corruption in the mining industry and the continuing colonial legacy. Contemporary research, images and video (Hilson and Maconachie, 2019 and Maconachie and Wharf, 2019) were used to tell the first-hand story of the exploitation of small-scale diamond miners in Sierra Leone (Figure 12). This is the first time this story has been told in a UK museum.

Diamond mining is Sierra Leone’s most lucrative export industry, with an annual production of up to \$USD 250 million (Maconachie and Wharf, 2019). Due to poor governance and corruption, only a fraction of this wealth returns to the people who mine the diamonds. The miners are only paid by their ‘supporters’ if they find diamonds, leading to a highly unequal relationship.

Manchester Museum’s display not only tells this story, but the interpretation prompts people to question where diamonds are from before they buy them. It is hoped to survey visitors about their response to the display at a future date.



Figure 12. Diamond mining in Sierra Leone. © Roy Maconachie, Centre for Development Studies, University of Bath.

Discussion

This research shows that the role of Black people, Chinese people and Indigenous communities played a key role in the formation of what is now Manchester Museum's mineral collection. Until now, these stories have either been unresearched or not acknowledged. Significant parts of the mineral collection are directly or indirectly a result of the activities of empire. The exclusion of these narratives through not dedicating time and resources to researching colonial histories and complex colonial stories, and editing them out during the exhibition development process, fosters the status quo and constitutes structural racism in the museum sector.

Museum mineral collections have not been analysed in this way before. This paper is a call to action to other museums to do the same, establish methods, challenge racism in the sector, share and develop their collections and engage with new audiences.

Why has this research not happened before?

There are a few practical reasons why this research has not happened before and other reasons that reflect racism in the museum sector and wider society.

It is only relatively recently that Manchester Museum finished documenting its mineral collection. Documentation work is often lower priority than exhibition and public engagement work, particularly in regional museums, as the benefits are usually indirect. It is only possible to uncover these stories and undertake this kind of data analysis with a full collection data set.

Under normal circumstances, it is difficult to dedicate time to do this research. Developing Manchester's new mineral display and the subsequent COVID19 lockdown in 2020, provided the opportunity to undertake this research.

There is undoubtedly a new appetite to uncover these kinds of stories. The Black Lives Matter movement has challenged society to be much more honest and transparent about its past and its racist practice, both in the past and present. Museums are no exception to this.

There are a number of pioneering examples exploring the decolonisation of museums (as discussed in the introduction to this paper), but with the exception of Das and Lowe (2018), few publications have looked at natural science collections, or specifically minerals. Natural science

specimens were collected to provide scientific data, with their context having little relevance beyond the presence or absence of a specimen at a particular time and place. If the story of their collection is told, it is usually about the white male collectors. There has been a disconnect between scientific natural history specimens and most of the people involved in collecting them. This fosters racism, as described by Das and Lowe (2018: p.14) '...this absence – particularly in relation to colonial histories – perpetuates structural racism within modern society by whitewashing a history where science, racism, and colonial power were inherently entwined. This misrepresentation of the past is problematic because it alienates non-white audiences.'

These stories are often difficult to tell and difficult to hear. They are stories of racism, abuse and exploitation, some of which continue to this day in the form of exploitation of people in mining operations and generational trauma. In Manchester Museum's new mineral display for example, it was decided to primarily tell these story through images rather than text. The limitations of this medium mean the details are lost, which are often the complex hard to find stories of the disempowered victims and labourers, such as the miners revealed above. The exhibition design process inevitably involves editing stories and cutting some stories altogether. Simple stories that can be quickly grasped by the public, are usually the ones that make it through the editorial process, usually stories of science and White men. This structural racism across the museum sector perpetuates the status quo, as it excludes stories of Black and Indigenous history from museum displays.

Minerals and Empire

The lure of valuable mineral deposits is a powerful motivation to colonise a country. Much of the historical wealth of Britain (and many other European countries) at home and abroad is fundamentally rooted in the land and the exploitation of people in order to convert that land into wealth. Mineral resources not only provided the raw materials for building and powering the railways, shipping and industry of empire, but provided a quick turnaround from the sale of government mineral claims to foreign investors.

Manchester Museum's mineral collection, to a significant extent, reflects the economic activity of empire, in distribution and what was of value to empire builders. This seems comparable to data from Bristol Museum, but more work is needed.

Manchester Museum has never explicitly aimed to collect the mineral resources of empire, but has done so by proxy. The distribution of country of origin of the minerals also reflects the geology of where the minerals were found, but even if it isn't always the initial reason for colonising a country it provides a strong motivation to exploit it.

Lack of resources dedicated to collecting has meant the collection is dominated by gifts, for example from H. F. Harwood, or transfers from, for example the Imperial Institute (Figure 3). The colonial context of the mineral collections is an inherited legacy and has not been researched or told through an exhibition before. The remit of Manchester Museum, since moving to the University has been public and university student education and research (Eagar and Preece, 1977). The Imperial Institute specimens for example have been used for this purpose since their transfer, in contrast to their original reason for collection (which was 'investigation and exhibition of the natural resources of empire' (Furse, 1926)).

In contrast to most other museums, The Museum of Practical Geology was more open about their desire to map the resources of empire. The Museum of Practical Geology, now part of the Natural History Museum, London, was one of the oldest single science museums. It had a mission to illustrate 'the mineral wealth of the kingdom and colonies, displayed models of mining machinery, and analysed ores, metals and building stone for government departments' (Stafford, 1984).

There is an ever-growing demand for minerals whether it is gold and diamonds, or for the vast array of other chemical elements that are used in machines, industry and electronic devices. Museums need to tell the stories of Black and other Indigenous communities involved in their mining and the impact of mining on their ancestral land. Exploring who was involved and at what cost is a vital part of why people should care.

The role of objects and data in decolonisation

There is something special about interacting with real objects. Experiencing an object through either observing it in a museum display or through handling it, gives a direct connection to a subject matter or history that cannot be replicated elsewhere. For example, the gold ore specimen from South Africa (Figure 4) gives a direct insight into the experience of the miners who extracted the gold ore (Figure 6) and the people involved in sorting it (Figure 7). The sharp edges of the broken rocks must have caused regular injuries to workers' unprotected hands. The gold ore specimen

brings the black and white photographs to life through engaging other senses. It brings the experience to the present, rather than a far-off historic episode that happened to other people in a distant country. In short, museum objects can be a powerful way to encourage empathy.

The Sierra Leone diamond specimen (Figure 9) is still embedded in the rock in which it was found. When this specimen is seen from different angles, white pebbles can be identified in the rock matrix. These are essential clues to the sedimentary nature of the diamond deposit and the near surface setting. The geological setting is key to understanding the context of the exploitation of the miners today. Much of the impact of this narrative would be lost without clues from the real specimen.

One of the challenges of decolonising collections is that information is often missing or incomplete. However, research into both the Museum's gold ore and the Sierra Leone diamond has shown that even with limited information, it is possible to construct an object history and uncover clues to the missing role of Indigenous peoples. Lack of information about an object makes it much harder to represent a story accurately, but it is not a reason to avoid looking for the stories of empire and the people involved.

The data associated with natural history specimens is often as valuable as the object itself. The record of something at a particular time and place can be invaluable in for example, discovering long forgotten mineral resources, or making informed decisions about landscape management and conservation. Widely sharing this information, making a difference here and now, should be seen as an integral part of museum decolonisation.

The role of photographs in decolonisation

Photographs are probably the quickest way to encourage empathy from museum visitors. Figures 6 and 7 give a sense of danger and hardship, not only through the risks of underground mining, but also the likely harsh treatment by the White overseer of the Black African workers at the sorting table. Assaults by White miners on African workers were commonplace (Smith, 1993: p.55) and were meant to be reported, but rarely were for fear of reprisals. In comparison, it is harder to gain an understanding of what the lives of the people featured in Figure 8 were like. Their work is implied through the mine tunnel setting, carts, tools and clothing, but there is little evidence beyond that. There are clear limitations of what can be gained from a staged photograph.

It is tempting to take the Keystone View Company images at face value and assume the images show an accurate representation of the lives of the people photographed. This is probably only partly true, but to what extent are they documentary photographs and what extent are they entertainment? The Keystone View Company was a commercial organisation, selling mainly stereographs (Gleason, 2018). The photographs had a dual educational and entertainment role and were chosen as a result of customer choice and a sales agent's pitch (Gleason, 2018: Chapter 5). The company would have chosen photogenic subjects that would have sold more copies as 'unlike other photographic companies, their company's primary focus was sales rather than photography' (Gleason, 2018: p.234). There would have been an inevitable unconscious bias. Images that showed what their clients wanted or expected to see, (such as the 'Human Moles' in Figure 6) would have been more popular and profitable.

The decision by the Keystone View Company to anonymise their photographers (as many other photography companies do), writes them out of history. There is a striking parallel with museum documentation, which almost universally anonymises the collectors beyond a named patron (though this sometimes happens before specimens enter the museum). This practice continues in many museums today, misses an opportunity to tell a more detailed history and can put some people off donating objects.

Diamonds and Sierra Leone

Diamonds are strongly linked to the development of colonialism, particularly in the British Empire. The most dominant diamond company by far, is De Beers. Originally set up by the British 'arch-imperialist' Cecil Rhodes (Maylam, 2002) in 1880, De Beers has acted as a cartel controlling the market, more or less ever since (Spar, 2006).

It is easy to assume that the diamond market is fuelled by people's desire to own something innately beautiful, enduring and rare, but it's mostly a result of De Beers' efforts to restrict supply and manage demand. For hundreds of years, diamonds were the preserve of royalty. In the late 1800s the sheer number of diamonds flowing out of African mines threatened their scarcity, a key driver in the demand (Spar, 2006: p.198). De Beers and its syndicate were able to acquire and stockpile the stones, releasing them slowly to inflate prices (Spar, 2006: p.198).

In parallel to controlling the supply, De Beers has been staggeringly successful in managing demand.

They arguably invented the now ubiquitous tradition of diamond engagement rings (Bringing, 1990). In the 1938, De Beers hired the advertising agency N. W. Ayer who managed to align diamonds with love and marriage in people's minds. Diamond engagement rings had previously only played a part in about 10% of marriage proposals in America. Their 'A diamond is forever' slogan was launched in 1948 which suggested a diamond, like your relationship, is eternal. They had managed to persuade men that a diamond (and how much you spent on it) was an expression of love and persuade women that they were an essential part of a romantic relationship. By 1965, diamonds rings were part of 80% of proposals.

The demand for Sierra Leone diamonds and consequences for the diamond miners has several influences, but much of it is a direct result of De Beers' domination and manipulation of the market.

Decolonisation

The term decolonisation has been around for many decades and originally referred to the withdrawal of colonial powers from the countries they had occupied (Thornton, 1963). H. G. Wells described the British public's knowledge and feelings about the British Empire: 'The British people themselves, the British democracy, had always been indifferent to the future of the British Empire, mainly because they knew so little about its past and so little about its present' (Thornton, 1963: p.7).

Museums and society have changed much since his comments, but it can be argued that most members of the public still know little about role of the British Empire (Haydn, 2019). The concern about this lack of knowledge and representation is reflected in the recent Black Lives Matter protests and calls to decolonise school and university curricula (Williams, 2017 and Atkinson *et al.*, 2018).

Many people who don't visit museums, particularly those from ethnic minority and/or socioeconomic disadvantaged backgrounds, are alienated by 'spaces or practices that reflect dominant values of Whiteness and class privilege' (Dawson, 2018: p. 13). The role of Black and Indigenous peoples, and those who were not wealthy, are generally not acknowledged. This is where museums need to change their approach.

The implications of decolonisation for Indigenous peoples are clear 'the survival of peoples, cultures and languages; the struggle to become self-determining the need to take back control of our

destinies' (Smith, 2012: p. 143). Museums can play a central role in the methodologies identified by Smith (Smith, 2012, chapter 8): 'Remembering', 'Intervening' and 'Returning' amongst others.

For museums, decolonisation should mean stepping back, looking at what and who we value and how the museum and collections have been shaped by colonising forces. The challenge is how to refresh museum stories using different narratives and approaches. Decolonising is about being open and honest about the impact on and role of people in the past and present, particularly Black and Indigenous peoples. Decolonisation is not limited to repatriation and goes beyond ethnography collections.

Limitations and further research

This research only goes so far and aside from a lack of associated information, is limited by a lack of community involvement. The next stage of bringing new meaning and voices to our collections is to develop partnerships with source communities and diaspora in the UK. We need to develop a shared sense of ownership and share power.

Outcomes from these partnerships could include: enriching collections and displays with Indigenous perspectives; giving back data to help develop conservation programmes; proactively explore repatriation where it is wanted (though the general consensus is that it is unlikely there will be repatriation requests for geological material).

Conclusion

This research has shown that 24% of Manchester Museum's mineral collection is closely connected to empire. The history of Black and Indigenous peoples runs through much of our collection, but particularly in natural history collections, is largely unresearched and not acknowledged in displays. Institutional approaches, whereby time and resources are not committed to researching colonial histories and complex colonial stories do not get past exhibition editing process; means that this practice continues. This is structural racism and museums need to be proactive in addressing this in order to break from primarily reactionary practices related to decolonisation.

There are enormous opportunities to develop this research through fostering partnerships with source communities around the world. These partnerships could bring new meanings, a shared understanding of the ongoing impact of empire and repatriation of data, and where wanted repatriation of objects. In short, decolonising museums is the

right thing to do and will put museums in a good position to help bring cohesion to society and develop understanding between cultures. This paper is a call to action.

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Appendix I: Country of origin and number of mineral specimens from each country within Manchester Museum's mineral collection.

Country	Number	Country	Number	Country	Number
Afghanistan	3	Greece	38	Pakistan	10
Algeria	6	Greenland	51	Paraguay	1
Anguilla	2	Guadeloupe	1	Peru	27
Antarctica	1	Guatemala	1	Philippines	3
Antigua and Barbuda	3	Guinea	1	Poland	36
Argentina	23	Guyana	4	Portugal	17
Armenia	1	Honduras	1	Reunion	1
Australia	910	Hungary	84	Romania	93
Austria	200	Iceland	35	Russia	143
Bahamas	2	India	148	Saint Helena	3
Belgium	62	Indonesia	12	Saudi Arabia	3
Bermuda	1	Iran	14	Serbia	1
Bolivia	107	Iraq	1	Serbia	1
Bosnia	1	Israel	1	Sierra Leone	5
Brazil	117	Italy	400	Slovakia	65
Cameroon	1	Jamaica	2	South Africa	87
Canada	361	Japan	17	Spain	168
Cape Verde Islands	1	Kazakhstan	12	Sri Lanka	49
Chile	401	Kenya	3	St Lucia	1
China	23	Kuwait	1	Sweden	175
Colombia	12	Madagascar	16	Switzerland	184
Congo	7	Malawi	6	Syria	1
Croatia	3	Malaysia	10	Tanzania	14
Cuba	3	Mexico	125	Thailand	2
Czech Republic	206	Montserrat	1	Trinidad	4
Denmark	2	Morocco	26	Tunisia	7
Desolation Islands	1	Mozambique	2	Turkey	10
Dominican Republic	1	Myanmar	7	Uganda	22
Egypt	18	Namibia	54	UK & Ireland	5289
Estonia	1	Netherlands	2	United States	1169
Falkland Islands	1	New Caledonia	7	Uruguay	7
Faroe Islands	149	New Guinea	1	Venezuela	6
Fiji	1	New Zealand	123	Virgin Islands	1
Finland	13	Nicaragua	1	Zaire	4
France	130	Nigeria	11	Zambia	26
French Polynesia	5	Norway	714	Zimbabwe	17
Germany	520	Oman	1	Total with locality:	12885
				Un-located:	7222
				Total:	20107

Appendix II: Details of who Manchester Museum's Australian minerals were acquired from and number of specimens.

Australian mineral donor	No. of Specimens	Australian mineral donor	No. of Specimens	Australian mineral donor	No. of Specimens
Alderson, Don	1	University of Manchester Geology Department	1	Moore, M.	16
Altrincham Museum	9	Grant	4	Museum of Victoria	10
Axon, Howard	4	Green, David I.	131	Nathan, Victor	6
Barstow, Richard W.	1	Greenway, B.	11	Nudds, John	1
Bateman, Thomas	47	Greybill, P.	1	Ogle-Skan, J. F.	2
Bell, W.	5	Harrison	3	Parkinson	1
Beyer, B. D	6	Harwood, Henry F.	84	Platt, S. S.	1
Birley, Caroline	5	Haywood, J.	2	Prince, W. D.	3
Boyd-Dawkins, W. B. D.	7	Henshall, H.	2	Roscoe, Henry, E.	1
Briggs, H.	2	Holmes, F. A.	1	Royle	2
Brown	15	Hopper, Christine M.	2	Sanders	1
Butler, Henry F.	5	Hopwood, A. T.	4	Seward, Terry	1
Buxton Museum	2	Hunt, Kathleen]	2	Stirrup, Mark	5
Cain, W. D.	2	Imperial Institute	301	Swindells, Rupert	1
Consolidated Beryllium Ltd	1	Jack, R.	1	Thornton, Jocelyn	2
Cook, W.	2	Jewson, Chris	2	Tuscon Mineral Show	1
Critchley, Harry	3	Johnson, T.	1	Unknown	76
Day, Bernie & Marge	62	Jowett, F. P.	1	Watson, D. M. S.	3
Dermot, Henry	2	Leech, J. J.	3	Wilde, George	4
Donner	5	Lind	1	Williams, Peter	1
Foote, A. E.	1	Lucas, B. R.	2	Wood, J.	6
Forbes, David	4	Lythe Minerals	2	Total:	910
Fraut	11	Melland	2		

Appendix III: The number of Australian minerals at Manchester Museum, by scientific name. NB. The 234 specimens are identified as 'ore samples' and come from seventeen different donors (four specimens do not record the donor). 154 of these specimens came from the Imperial Institute.

Australian Mineral	No.	Australian Mineral	No.	Australian Mineral	No.	Australian Mineral	No.
Actinolite	5	Cobaltaustinite	1	Lavendulan	1	Saleeite	1
Adamite	2	Copper	11	Lepidolite	1	Sampleite	2
Agardite	1	Cornetite	2	Leucophosphite	1	Scheelite	2
Albite	2	Coronadite	4	Levyne	2	Schumacherite	1
Alunite	3	Corundum	4	Libethenite	2	Segnitite	2
Analcime	6	Covellite	1	Linarite	1	Serpentine	1
Andalusite	1	Cowlesite	3	Magnetite	3	Siderite	1
Anglesite	7	Crocoite	6	Malachite	16	Sieleckiite	1
Antimony	1	Cuprite	9	Manganpyrosomalite	1	Silver	7
Antlerite	1	Cyanotrichite	2	Margarite	1	Simpsonite	2
Apatite	2	Cyrilovite	2	Mesolite	4	Smithsonite	18
Aragonite	2	Davidite	4	Meteorite	6	Spangolite	1
Artificial	4	Decrespignyite	2	Miargyrite	1	Stannite	6
Atacamite	5	Dolomite	1	Mimetite	2	Stellerite	2
Austinite	2	Dravite	2	Molybdenite	10	Sternbergite	2
Azurite	13	Dyscrasite	1	Monazite	5	Stibiotantalite	2
Barite	5	Erythrite	1	Mrzakekite	1	Stibnite	10
Bavenite	1	Fergusonite	2	Namibite	1	Stichtite	3
Bayldonite	2	Ferrierite	3	Nantokite	6	Stilbite	1
Beryl	2	Ferrimolybdite	4	Newberyite	2	Stillwellite	1
Beudantite	4	Fluellite	2	Olivenite	1	Sylvanite	1
Bismuth	3	Fluorapatite	1	Opal	22	Tektite	3
Bismuthinite	1	Fluorite	1	Ore sample	79	Tetrahedrite	2
Bismutite	1	Galena	55	Ore sample Antimony	2	Thomsonite	8
Bornite	3	Garnet	3	Ore sample Bismuth	1	Torbernite	5
Brianyoungite	1	Garnierite	1	Ore sample Copper	14	Tourmaline	3
Brochantite	3	Gartrellite	1	Ore sample Gold	70	Tridymite	1
Cacoxenite	2	Gerhardtite	1	Ore sample Silver	26	Tsumcorite	1
Calcite	7	Gmelinite	5	Ore sample Silver/ Lead	5	Tsumebite	1
Carminite	5	Goethite	19	Ore sample Tin	37	Turquoise	3
Carnotite	2	Gold	20	Orthoclase	2	Ulrichite	3
Cassiterite	69	Gonnardite	2	Peisleyite	1	Variscite	1
Cerussite	9	Gypsum	2	Perhamite	1	Wavellite	6
Chabazite	5	Hedenbergite	1	Phillipsite	1	Widgiemool- thalite	1
Chalcoaluminite	1	Hedyphane	1	Pseudomalachite	2	Willemite	2
Chalcocite	1	Hematite	6	Pyrrargyrite	1	Wulfenite	6
Chalcopyrite	6	Hentschelite	1	Pyrite	4	Yttrotantalite	2
Chalcosiderite	7	Heulandite	5	Pyromorphite	19	Zircon	4
Chlorargyrite	8	Hydrocarbon	2	Quartz	18	Total:	910
Chrysocolla	2	Hydrozincite	1	Rhodochrosite	1		
Cinnabar	1	Iodargyrite	3	Rhodonite	1		
Claringbullite	1	Kaolinite	1	Rosasite	2		
Clinoclase	1	Kleemanite	1	Rutile	4		