BOOKS

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The source of all avarice

A theory held by those who study mines is that the greater a country's untapped resource wealth, the lower it will stand on development indices after that wealth is extracted. This is called the 'resource curse,' and nowhere has it been more evident in recent decades than eastern Congo

Consuming the Congo:
War and Conflict Minerals in the World's Deadliest Place, by Peter Eichstaedt. Lawrence Hill Books, 272 pages, $24.95

By Shefa Siegel

I get a variety of reactions when i tell people I'm interested in the way mining influences economics and the environment. If I describe the millions of artisanal gold miners at work in Africa or South America, there is alarm and fascination that manual mining reminiscent of the California gold rush persists in the world. Meanwhile, my descriptions of mining companies working in these places elicit disdain and sometimes an appetite for stories of the harm they spread. A third response is boredom.

This spectrum – from apathy to outrage – reflects a common ambivalence about the materials we mine from the earth. Whether one is rich or poor, life is the end of a chain

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Avarice

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that connects minerals to humans. In 1972, the United Nations' original environmental manifesto, "Only One Earth," calculated that individuals from industrial societies depend on 10 tons of steel and 150 kilograms of copper, lead and aluminum to meet their daily needs. This estimate, however, predated the emergence of our digital age and the proliferation of consumer electronics whose production raised demand for traditional metals and invented uses for many "new" industrial minerals.

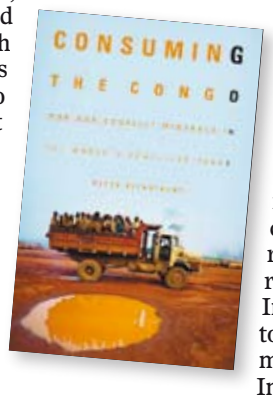
It is not only the wealthy who need minerals. The Nobel Peace Prize-winning economist Muhammad Yunus has a list of 10 essentials a person needs to be free from poverty. Topping the list is a house with a tin roof. Yet, the perspective that mining is a regressive activity has ancient roots and modern sympathizers. There is a saying among the people of Piura – who live among mines active since Incan times – in northern Peru, "Agriculture is life, mining is death."

This view of mining as a destructive force is at least as old as Pliny the Elder, the 1st-century C.E. Roman naturalist, who called mining "the origin of avarice." "The things that she [earth] has concealed and hidden underground," Pliny concluded in his book about mining, "those that do not quickly come to birth, are the things that destroy us and drive us to the depths below."

Pliny's prejudice remained so influential in the study of mining that as late as the 16th-century, German physician Georgius Agricola, felt obliged to repudiate him. Agricola wrote and illustrated the first comprehensive study of European mining operations, "De Re Metallica," pioneering the scientific study of mineralogy. Published posthumously in 1556, the book pushed the alchemical tradition into oblivion and dispelled beliefs in practices like the divining power of dowsing twigs. It was also a vigorous defense of mining, fighting its reputation – apparently common to the time – as a source of social breakdown rather than a foundation of civilization. "If there were no metals," Agricola writes, "men would pass a horrible and wretched existence in the midst of wild beasts."

'Germinal' and 'Nostromo'

Mines have long held an important place in literature and politics, in addition to economics. Writers like Emile Zola ("Germinal") and George Orwell ("The Road to Wigan Pier") depicted coal miners in France and northern England, respectively. Joseph Conrad wrote "Nostromo" about a South American silver mine, and in his book "The Periodic Table" Primo Levi has a superb chapter about working in an asbestos mine.



Curiously enough, the more reliant humanity became on mines and metals during the 20th century, the less attractive it became to examine the influence of these resources on economics, the environment, peace and war. Several new books about mining may signal a revival of sorts. One of these is Peter Eichstaedt's "Consuming the Congo: War and Conflict Minerals in the World's Deadliest Place." From 2006 to 2009, the author, a journalist, traveled to mines in the eastern provinces of the Democratic Republic of the Congo (DRC) – a country where 5 million people were killed as a result of war between the mid-1990s and 2007. Three million of these deaths were in the mineralized eastern provinces. On trips to the provinces of North and South Kivu and the Ituri region, particularly conflict-ridden parts of the country, Eichstaedt hears a common refrain during interviews: All the war parties – Hutu, Tutsi and Mai-Mai ethnic groups; the neighboring countries of Uganda, Rwanda, Burundi, Tanzania and Congo – are fighting for control of gold, tin, coltan and tungsten mines. "While the history of the war in the region is known," he writes about the hostilities in the DRC, "the demand for minerals that coincided with and in part caused the wars has largely been ignored." Elsewhere, he is more adamant that mines – more than tribe or ethnicity – are the cause of war. "Minerals are not only the source of conflict," a Congolese lawyer tells him in the city of Goma. "They are the source of the persistence of war and conflict." Eventually, Eichstaedt comes to view minerals as a curse "hovering over everything."

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The wars of the last 20 years, whether in the Balkans, Rwanda or the Middle East, were most commonly described at the time in terms of identity – physical battles over metaphysical properties. By focusing on resources, Eichstaedt returns to an old theme about the role of minerals in war and peace. In the late 1970s, American historian Alfred Eckes, Jr., a former commissioner of the U.S. International Trade Commission, argued that World Wars I and II were turning points in global mineral economics. Before World War I, the United States produced 96 percent of the natural resources it consumed. Supplying the allied forces with fuel and minerals, however, created increasing dependence on foreign mines, so that by the end of World War II, the U.S. was a net importer for most essential minerals.

Although he took little personal interest in raw materials, U.S. President Woodrow Wilson was accompanied by a mining adviser, Charles Leith, to the post-World War I Paris peace deliberations. Given the country's diminishing reserves, his geologists were responsible for briefing the administration on the capital and political influence controlling key mineral industries. In part, this new premium on international mining expertise contributed to Herbert Hoover's ascent to the post of commerce secretary, and, later, president. Hoover was a mining engineer of great repute who introduced flotation – a revolutionary process improving the recovery of copper, zinc and lead – to the Anaconda mines in Montana after learning to use it in the Broken Hill mineral field in Australia. Together with his wife Lou, Hoover also published the first English translation of "De Re Metallica" from Agricola's Latin.

By the end of World War II, the recognition that the United States could not simultaneously ignite the consumer economy and return to resource independence resulted in the policy of mineral "interdependence." Initially, this policy was to feature two strategies: creating incentives for American mining companies to invest overseas, and an international accord to limit future wars by ensuring conservation and fair distribution of resources. Hugh Keenleyside, the Canadian civil servant who served as the first director of economic development at the United Nations, explained in his memoir "On the Bridge of Time" (1982), "It was clear that the demand for mineral products was increasing at such velocity that unless there was a fundamental change in the economic fabric of human society, we would ultimately be faced with the exhaustion of many mineral reserves ... Cooperation was needed to avert eventual conflicts over shortages." Keenleyside's call went unheeded. Instead, the frenzy for minerals exploded without restraint during the postwar years, catalyzed by the population boom, consumer revolution and urbanization.

Slavery, killing, genocide

In concluding that mining is a "curse" on the land, Eichstaedt is aligned with an academic theory known as the resource curse. The concept is based on data showing an inverse relationship between resource abundance and human development; the greater a country's untapped resource wealth, the lower it will stand on development indices after the resources are extracted. Chief among the causes of the curse is the power of resource wealth to corrupt. Regardless of continent or context, profits from mining are captured by business and political elites.

The question that preoccupies observers of the mining industries today is whether

Photographs by Shefa Siegel

Photographs from a gold mine in Burkina Faso. There is a saying among the people of Piura of northern Peru: "Agriculture is life, mining is death."

resources can be turned from curse to blessing by building superior political and legal institutions. Intellectually, this is where Agricola's shadow diverges from the school of Pliny. If Agricola upholds mining as humanity's prized advantage in nature, for Pliny, mining brings "ruin" to human life, through the inventions of currency and usury, the aspirations of luxury and the idle life, and the use of metal and money to dominate and enslave other one another. "The worst crime against man's life was committed by the person who first put gold on his fingers, though it is not recorded who did this," Pliny wrote.

Just as Agricola was correct, so was Pliny. The history of mining includes slavery, killing and genocide perpetrated in pursuit of wealth. A mine is "a power on the land," Conrad writes in "Nostromo". Conrad was from Poland, a land familiar with the power of mines. When freed from Auschwitz, Primo Levi's first encounter was with coal miners in the nearby Silesian city of Myslowice, thirty kilometers from the camp. These miners worked for the Todt Organization, the Nazi engineering company that enslaved 1-2 million laborers from occupied countries.

Germans were hardly the first to make slaves of miners. In 1501, Queen Isabella decreed that indigenous people would not be enslaved, rejecting the recommendation of Columbus. Two years later she issued a second, seemingly contradictory, decree: The people are not slaves, but they must mine gold. Isabella's equivocation created concerns among conquistadors about labor supply in the colonies of the Caribbean, New Spain and New Granada, a conundrum solved by bringing the first slaves from Africa to the Americas to mine for gold.

Germany was also not the last to make slaves of miners. A decade after Auschwitz, an astonishing number of Ukrainians – perhaps 2 million – were still dying in the Siberian gold mines where Stalin forced them to work. Meanwhile, Eichstaedt reports that militias in eastern Congo – which boasts mines for gold, tin and coltan, among other minerals – also force people into mining. When one Ugandan- and Rwandan-backed militia pushed a rival out of a gold mine, the militia, having no mining expertise, coerced local miners into unpaid service as armed men stood guard. Another mine Eichstaedt visits is staffed by former child soldiers, now working freely, but formerly subjugated in mines by the militias.

Fueling wars in developing countries

A central contention of "Consuming the Congo" is that our consumer choices in the developed world fuel wars in developing countries in Africa, and, presumably, other parts of the world. "Each time we use a mobile phone, use a video game console, or open a tin can, we hold the lives and deaths of the eastern Congolese in our hands," Eichstaedt writes, referring to the use of tin and coltan in the circuitry of cell phones and computers. When a miner gives him a bag of coltan – a black metal used to store energy in electrical fields – he reflects, "I hold the source of years of conflict that has claimed many lives. A very small portion of this mineral [could] have found its way into the world markets, and perhaps even into the portable telephones that all of us carry. For such a minuscule amount, there has been so much bloodshed. The disproportion feels strangely haunting."

Coltan from the DRC accounts for less than 10 percent of world supply and has, Eichstaedt explains, numerous applications beyond consumer electronics, including in nuclear reactors, aircraft engines and missiles. Eichstaedt is a proponent of certifying global supply chains, a fashion that began when the concept of "fair trade," for such agricultural goods as coffee and cocoa, was introduced in 1988. Ten years ago, this trend was applied to mining as well, in response to the furor over so-called blood diamonds (or conflict diamonds), whose mining and trade is blamed for financing wars in Africa.

This renewed interest in supply-side mineral economics is vital to reeducating ourselves about the raw materials enabling the digital age. It used to be easy to count off the essential minerals and fuels such as iron, copper, zinc, lead, tin, mercury and coal. Early 20th-century steelmaking innovations, from which we got submarines, tanks and planes, led to the production of ferroalloys – chromium, nickel, tungsten – whose previous uses were restricted to laboratories. The breakthrough of consumer electronics over the last 20 years is equally revolutionary, and one whose impact economics, the environment and war we are only beginning to understand.

The problem with comparing mineral chains to food chains, however, is that many of the mines Eichstaedt describes are part of extra-legal, or "informal," economies, whose existence is not recognized by their host governments. These mines number in the hundreds of thousands, if not millions, and it is difficult even to speak of ethics certification so long as the mines do not officially exist. A second problem is sometimes called "traceability" – accounting for every step of mineral production from the hole in the earth to the digital consumer in New York or ornamented bride in Mumbai. In free-trade agriculture, traceability is a feasible prerequisite: A coffee bean is a coffee bean, and the commodity retains its individuality. But once minerals are smelted, however, there is no discerning their origin. And a final, most fundamental problem is how to discern the lines dividing dirty and clean. Marx wrote that all gold and silver brought to Europe from the colonies "comes dripping from head to foot, from every pore, with blood and dirt." The historian Kris Lane, in his wonderful recent book about Colombia's colonial emerald trade, "Colour of Paradise," quips that "Conflict [minerals] is a distinction Marx might have found humorous."

Eichstaedt is not oblivious to the dilemmas of attempting to investigate every link in the tortuous chain between mines and the beneficiaries of the minerals extracted from them. "Tracing, tracking, and verifying the sources will be nothing short of a nightmare," he acknowledges. More troubling is the article of faith held by advocates of ethical commodities, namely, that if people just know the impact of their market choices, they will seek, and even pay more for, alternatives. It is an idea that is neither true nor to the point. In September, The Mining Journal, the world's longest-running mining magazine, alerted readers to a recent calculation published by the Global Footprint Network, which measures human impact on the environment. The data show the world is in resource overdraft – consumption of natural resources exceeds Earth's capacity to support the population.

Resource arguments always run the risk of ecological determinism or the Malthusian fear of the Earth reaching its capacity to carry human population. Still, in a world of 7 billion people, the crime is not the existence of mining, but a refusal to face the interdependence of raw materials, peace and ecological sustainability. New methods of extraction and processing postponed the resource scarcities predicted by environmentalists in the 1960s, yet the demand for mineral products is increasing at such velocity it's hard to imagine resource rivalries won't become a vector for war, if they are not already.

Shefa Siegel is associate research scholar at the Vale Columbia Center on Sustainable International Investment, a joint center of Columbia University's law school and Earth Institute, and a columnist for the online magazine The Mark (www.themarknews.com).