an appointment as the sole professor and chair of the concurrently created Department of Mining Engineering at the University of Queensland in Brisbane. Over the next fifteen years he built that department, adding faculty and developing programs, including establishing the University of Queensland Experimental Mine for teaching and research in 1951.

Thanks to his success at the University of Queensland, White was pursued by McGill University in Montreal, Quebec, to revive its mining program. Hired initially as a visiting professor in the autumn of 1965, he accepted permanent appointment in March 1966 as Macdonald Professor and Chair of McGill's Department of Mining Engineering and Applied Geophysics. There he served the remaining six years of his career, reenergizing and reorienting McGill's program, before succumbing to cancer on 26 November 1971, aged 62.

Offering an interesting personal assessment of White to conclude his book, the author describes him as "a driving personality" and "not the best role model for work-life balance," while also acknowledging "a poignant family perspective" involved in relocating hemispheres away from Brisbane to Montreal. Throughout his narrative, however, the author also characterizes his father as sociable, a good listener, and a visionary leader. At his universities, the author classifies White as more "research manager" than researcher, arguing that his real strengths were in organizing, developing talent, and superintending the politics necessary to develop and sustain such programs.

As biographers often do, Franklin White has encountered the difficulties of trying to assess the life of someone not famous decades after his passing. The author describes his sources as "a modest trove of documents in a few box files that survived his passing," some books from his subject's library, and some press and professional publications. He relied upon Tessie's unpublished memoir, "Adventures with a Mining Engineer," to add color and detail to his narrative. The author also mentions using "correspondence between my parents when separated due to war-related circumstances," but almost nothing of a personal nature is quoted in the text, perhaps an opportunity lost to illustrate part of the price paid by mining professionals because of the often remote and transient natures of their careers.

One solution to such dearth of information is the life-and-times approach often employed by biographers, in this case effectively. Much of the book considers the context in which Frank White operated as much as the man himself. The author casts White as a creature of the British Empire—born and raised in Australia, and employed for years there and in Fiji, Malaya, and Canada—but one who evolved over the course of his life, personally and professionally. The author believes that the widely traveled Frank and Tess developed more cosmopolitan and tolerant personalities than a more sedentary profession might have induced. The author also credits Frank, somewhat ahead of his time, with seeing and trying to address the whole scope of mining within society, what Frank T. M. White called the total environment of mining: technological, economic, occupational, social, environmental. A worthy life well described.

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Allison Margaret Bigelow. *Mining Language: Racial Thinking, Indigenous Knowledge, and Colonial Metallurgy in the Early Modern Iberian World.* Chapel Hill: University of North Carolina Press, 2020; 376 pp., 21 b&w illus., 5 maps, notes, 3 append., ind., cloth, $39.95. ISBN: 9781469654386

Mining historians consistently center the mine in their examination of mining communities around the world. They describe daily life, the workplace, and the surrounding regions through various analytical lenses in order to understand

how mining shapes these areas. Yet language has been overlooked as a mode of analysis to understand how the mining lexicon conveyed life, ideas, and value.

In *Mining Language,* comparative literature scholar Allison Bigelow emphasizes language in her exploration of mining communities of colonial Latin America. At the time, the vast Iberian empire in the Americas encompassed gold, iron, copper, and silver mines from the Rocky Mountain West to the tip of South America. In an attempt to supervise and control these varied mining sites, Spanish and Portuguese bureaucrats increasingly preoccupied themselves with the technical lexicon. This lexicon varied from place to place and depended largely on the material being mined. By centering the language involved in the development of metallurgical techniques and mining methods, Bigelow captures how this technical lingo illustrated life, ideas, and significance beyond the mine. Her analysis demonstrates the interconnected quality of mining sites across this region while including the diverse communities that participated in extraction.

Bigelow provides a model for how to analyze the fluidity of technical language, the cultivation of local knowledges, and the diverse voices in building this lexicon. Using letters from Spanish and Portuguese bureaucrats, mining councilmen, and mining dictionaries, she delves into how indigenous miners added to the local mining vocabulary by using indigenous words instead of Spanish phrases, a subtle act of resistance. Because Latin America included freed and enslaved peoples of African descent, she notes how they influenced metallurgy by employing previously learned techniques. Lastly, Bigelow underscores the reach of the Iberian empire by describing how South Asian mineralogical methods shaped metallurgy in New Spain.

By including the voices of each of these groups, we see how human actors from diverse backgrounds influenced the study of metallurgical science and raw materials in mining. For example, take the Spanish term for miner—*minero*. *Minero*, as Bigelow notes in her introduction, originally referred to "a source" (14) as described in texts from the thirteenth and fifteenth centuries. This metaphorical "source" for precious metals soon became embedded in the human body and occupation whose physical labor helped extract mineral resources.

In addition to her careful analysis and detailed accounts derived from primary sources, the author shines with the book's principal strength of examining encounters. Encounters between groups, such as indigenous, European, African, and Asian, underscore the exchange of information, language, ideas, and materials, among other things. One such encounter comes with Fidalgo d'Elvas, a Portuguese foot soldier who explored La Florida, which then included the Carolinas. Bigelow describes the encounter with a *cacica* (woman chief) in *Cutifachiqui* (South Carolina).

While this narrative may be typically overlooked, Bigelow points to how a copper hatchet that caught the eye of d'Elvas during a meeting with this indigenous woman revealed metallic technologies in her community (175-85). Another such encounter takes place in the author's bibliography, as Bigelow illustrates the encounter not only between actors but also among disciplines. To illustrate how pre-Columbian Toltec artisans in Mesoamerica utilized iron metals in decorative pieces, Bigelow gives the reader an example of mirrorwork (111-13). Art historians, archaeologists, geologists, and cultural anthropologists all provide a rich bibliographic trove.

With regard to how this book will contribute to mining history, it offers a model to engaging subaltern epistemologies when it comes to metallurgy, scientific artifacts, geology, and raw materials in mining history, especially in colonial societies. Mining history in Latin America includes a narrative of subjugation, exploitation, and violence. Bigelow highlights how indigenous, African, and Asian ideas regarding mining contributed to methods in the Iberian empires through

a diverse technical lexicon and metallurgical techniques. In doing so, she captures language as a form of resistance during unimaginable horrors and oppression.

Organized by parts according to the metals mined—gold, iron, silver, and copper—the book will appeal to historians who work in mining around the world. Parts I, III, and IV analyze the contributions of indigenous and African miners in the Iberian empire, while Part II examines the discussions among Spanish and Portuguese writers regarding iron metals, early mineralogy, and medical rituals in the East and West Indies. The book would be appropriate for upper-level undergraduate seminars and for graduate students in history, language and literature, anthropology, and environmental humanities. As Bigelow notes in her conclusion, this book may be the first step in understanding the broader communities that contributed to mining history.

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Jarod Roll. *Poor Man's Fortune: White Working-Class Conservatism in American Metal Mining, 1850-1950.* Chapel Hill: University of North Carolina Press, 2020; 344 pp., 11 b&w illus., 2 maps, notes, bib., ind., paper, $29.95. ISBN: 9781469656298

Jarod Roll's *Poor Man's Fortune: White Working-Class Conservatism in American Metal Mining, 1850-1950* is a remarkable and engaging mining-labor history of the Tri-State District. Roll promptly establishes his perspective on the miners of the lead-zinc mines at the junction of the boundaries of Missouri, Oklahoma and Kansas. He describes them as proud purveyors of a faith in capitalism, a determination to work hard, an aversion to or sense of superiority over what they saw as "non-white" workers, whether African-Americans or immigrants, and a dedication to a masculine world that ignored the dangers that brought them injury, years of overwork, and invariably silicosis, their preeminent occupational disability.

Roll follows the movement of the region's history from the mid-nineteenth century, when discoveries of galena, lead, were first extracted, until the mid-twentieth century, when the extraction of lead and zinc functionally ended. By the beginning of the Civil War the region produced nearly a quarter of all American lead. While many mining regions attracted the new immigrants, this region was developed by native-born shovelers—men who loaded the cans or buckets and then hauled them to the surface. Initially working alone or in small groups, the early miners adopted work patterns and practices that shaped the district for a century. When the miners realized in the 1870s that zinc, too, could be recovered from the same shallow mines and with the same primitive technology—shovels, the area continued to develop and to provide an income for the shovelers. As youngsters, children collected and sold pieces of ore, which encouraged succeeding generations to prospect and to shovel. Brute labor removed the lead and zinc from often-shallow workings, and pervasive hostility to people of color meant that this was a white preserve.

Roll explains that while the western states, with their precious minerals and copper, were repeatedly disrupted by the economic cycles, the base metals of the Tri-State region satisfied the growing demand of the late nineteen century American industrial revolution. The district's laborers aspired to become successful mine operators and owners, as a few had done in the early years. However, opportunities declined in the late nineteenth century, as economic consolidation forced the shovelers from aspiring prospectors into the manual laborers whose hard work and youthful vigor created periods of seeming prosperity as the mineral discoveries expanded westward and southwestward from Joplin, Missouri, into Kansas and Picher, Oklahoma.

Roll recounts the astonishing accomplish-