

Robyn d'Avignon's Ritual Geology is a timely historical account focused on Senegal's and, broadly, savanna West Africa's gold-mining industry over a millennium. By focusing on gold miners, often called orpailleurs, d'Avignon harnesses oral sources interspersed with rich archives from West Africa and Europe to tell a dynamic history of gold mining. To achieve this, the author utilizes 'ritual geology', which encompasses 'a set of practices, prohibitions, and cosmological engagement with the earth that are widely shared and cultivated across a regional geological formation' (p. 5). In this, gold miners in the region stand as masters of environmental knowledge endowed with a scientific and geological understanding of gold exploration and extraction. This knowledge has significantly cushioned colonial and postcolonial state and corporate mining regimes. The author indicates that, amidst the expansion of corporate enclosure of African lands, it is essential to investigate the long-existing mining that serves as a livelihood for many, shedding light on its endurance and adaptations from the past to the present. The enclosures, with African government validation, sometimes contribute to pushing people to the margins, with pre-existing scientific and cultural knowledge about mining equally anathematized. The book is innovatively framed around the geological Brimian rocks of savanna West Africa, traversing several countries. It serves as a trailblazer for scholars in the humanities and social sciences interested in mining, highlighting how subterranean knowledge teaches a lot about how people make history.

How d'Avignon shows the sustenance of orpaillage over different politicaleconomic regimes reaffirms one thing: orpailleurs possess knowledge that has rendered them indispensable in West Africa's gold-mining terrain. They have been creative in taking flexible interventions to sustain the industry while securing livelihoods. The author made this revelation possible by venturing into a knowledge archive of orpailleurs and orpaillage, using extended ethnographic fieldwork. Some aspects of this rich knowledge archive may hold spiritual and cultural meaning to adherents. Some walk with a mixture of oral tradition - which Amadou Bâ called 'total knowledge'¹ – handed from generation to generation, in addition to their lived experiences that can constitute oral histories. The author, therefore, consulted a rich knowledge, and one may ask whether some concerned 'sacred' spaces or beings. A reflection on what such sacred spaces and histories, if any, meant to interlocutors participating in this project may be worth detailing further. In particular, were there limitations on how much could be observed by 'an outsider' conducting this ethnographic inquiry and any potential implications of the project? As some ideas in this book come 'as a resource for contemporary claim making' (p. 26), it is interesting to know which other pathways this project might have opened up to the interlocutors. Given that the author has forged a strong connection with these diverse communities for decades, does anything collaborative emanate from these encounters with orpailleurs and their broader communities during this project?

Corporate mining in Africa is sometimes accused of drawing on exclusionary lexicons. While some in postcolonial Africa mimic colonial state frameworks, others aim at their erasure or modification where previous laws offer flexibility for inclusive extraction. As d'Avignon argues regarding Senegal, corporations 'limit competing

¹ A. H. Bâ (1981) 'The living tradition' in J. Ki-Zerbo (ed.), *General History of Africa. Volume 1: Methodology* and *African prehistory*. Paris: UNESCO.

claims to gold deposits by emphasising their adherence to Senegalese law' (p. 164), which often receives state validation. *Orpailleurs*, d'Avignon further indicates, propose a moral and inclusive claim to mineral ownership and exploitation by seeing *orpaillage* as their 'granary' and 'livelihood', benefiting 'men, women, citizens, and migrants' (p. 164). This calls for a wider conversation about the competing 'language of subterranean rights'. This is because some postcolonial states' mining regimes are criticized for failing to transform the lives of citizens living on lands with rich natural endowments. If possible, could the author situate different conceptions of morality in extractive industries face to face with corporate social responsibility? Would there be synergies? This is against the backdrop of *orpailleurs*, in this book, and small-scale miners elsewhere showing levels of cooperation with corporations.² If the author were to expand the current framework or choose another, where could human rights fit into this long historical puzzle about contested entitlement or legitimacy over 'subterranean rights'?

Also, *orpailleurs* are shown to negotiate the gold-mining space by harnessing several ideas in a complex web of issues. Two are the positioning of 'racism' and 'ethnicity' (p. 180). Could a deeper engagement with 'ethnicity' help address the issue in context better than the use of 'race' (Lynch 2018)?³

To conclude, *A Ritual Geology* is an intellectually stimulating masterpiece for historians, anthropologists, policymakers and scholars interested in interdisciplinary research into the global and environmental history of resource extraction.

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We tend to associate mining with big technology, big capital and planetary globalization: a hydraulic shovel produced in the USA might be operated by a French engineer in a Malian mine listed on the London Stock Exchange. Robyn d'Avignon's *A Ritual Geology* masterfully shifts the scale, zooming in on the women panning for gold with sieves in Kédougou and the men working the placer deposits with handpicks in Sabodala. Yet the book's most powerful intervention is to show that these two scales – of transnational mining capital and of artisanal mining in savanna West Africa – are intricately connected and interdependent: colonial French geologists targeted known outcrops identified by Senegalese *orpailleurs*, while contemporary *orpailleurs* benefit from technology transfer and Chinese mining equipment. D'Avignon underlines the role of West African mineworkers as a pivotal source of geological data, labour and techniques crucial to the success of the capitalist endeavour to profit from the subsoil. Through a convincing combination of ethnographic and historical

² N. Yakovleva and D. A. Vazquez-Brust (2018) 'Multinational mining enterprises and artisanal smallscale miners: from confrontation to cooperation', *Journal of World Business* 53 (1): 52–62.

³ G. Lynch (2018) 'Ethnicity in Africa' in Oxford Research Encyclopedia of African History [online], https://oxfordre.com/africanhistory/>.