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INSIGHTS FROM THE FIELD

Environmental Racism and the Global Political Ecology of Industrial Disasters

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1. INTRODUCTION

Ruby Martin's son, Christopher Martin Colorant, worked in a toxic mercury thermometer factory in the verdant forests of Kodaikanal, located in the Western Ghats of southern India. Ruby recalls, "My son started work in 1986. He soon started experiencing blurring of vision, headaches, nausea, and breathlessness. He would hardly eat any food and would often tell me that there were no safety precautions at work" (IPT 2003: 9). At the factory, workers distilled mercury and crushed mercury-contaminated glass, often without being provided adequate protection. When distilled mercury evaporates, it produces a colourless, odourless vapour that disrupts the central nervous system, including the brain and spinal cord. Christopher's work at the factory involved checking toxic thermometers, and his health had worsened by 1989. Doctors concluded that Christopher's medical conditions—body swelling and weakness, fainting spells, back pain, vomiting blood, and kidney and lung damage—were due to mercury exposure at the factory. He died at the age of 33.

Christopher was one of more than 30 workers who died prematurely due to exposure to toxic mercury at the Kodaikanal mercury factory, which employed hundreds of full- and part-time workers from 1983 to 2001. The factory's 25 exhausts also emitted toxic mercury into the atmosphere adjacent to the ecologically sensitive Pambar Shola Forest Reserve. As cases of toxic poisoning and fatalities rose, workers and environmental activists campaigned against the factory—at the time owned by Unilever, an Anglo-Dutch multinational corporation—which, they pointed out, had been illegally dumping mercury in Kodaikanal. In response, the Tamil Nadu Pollution Control Board closed the factory in 2001. Yet, to this day, the

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neurotoxin mercury continues to circulate unevenly within the nervous systems of factory workers as well as in forests through rivers, wildlife, and food chains. Ruby's courageous testimony on behalf of her late son is part of an ongoing struggle to hold Unilever accountable.

By following the struggles of workers and frontline communities from the forests of Kodaikanal to the shareholder meetings of global corporations, I track the ways in which workers, environmental justice organizations, and people's science movements are challenging the interconnected logics of global capitalism and environmental racism. As activists have demonstrated, Unilever's proposed remediation of Kodaikanal failed to follow the more stringent environmental standards of the United Kingdom and Netherlands, where the company is headquartered. Drawing upon community-based analyses of mercury contamination in the factories and forests of Kodaikanal, I argue that peoples' grassroots science—including sampling lichen, moss, water, and sediments—is integral to contesting racialized toxicities and hierarchies.

2. TOXIC RACISM

Environmental racism within the context of Kodaikanal does not just refer to the disproportionate impacts of toxic mercury on racial and ethnic minorities, but rather to the foundational role of environmental racism in the political, economic, and social structures that make possible the "global political ecology" of toxic mercury (Peet, Robbins, and Watts 2011). Environmental racism—the shifting of toxic waste to the Global South and the siting of hazardous industries on the lands of Indigenous and frontline communities—is integral to what Gill (2021) calls "the political ecology of racial capitalism". Toxic racism is not epiphenomenal to global capitalism but constitutive of contemporary regimes of capital accumulation and dispossession. Indeed, the siting of the Unilever factory in Kodaikanal is part of a long history of shifting toxic burdens to the Global South. During the 1980s, as environmental standards improved in the Global North, toxic factories and waste were increasingly shifted towards the Global South (Pellow 2007). In response to this global trend, in 1983, a mercury thermometer factory owned by Chesebrough Pond, which was originally based in Watertown, New York, shifted its production to Kodaikanal as a consequence of the promulgation of more stringent environmental standards in the United States.

Unilever, a multinational company known for its consumer products such as Lifebuoy and Fair & Lovely, acquired the Kodaikanal thermometer factory in 1998. Much like Union Carbide's industrial disaster in Bhopal, Kodaikanal is a site of what Rajan (2001: 384–389) calls "corporate

violence", where Unilever has constantly denied its role in harming workers' health and the environment. Yet, a detailed report by the Ministry of Labour and Employment (2011: 127) concluded that workers and their newborn children have suffered a range of illnesses: skin problems, tremors and knee pain, loss of memory and teeth, irregular menstrual periods, infertility, and premature births, among others. Racial and ethnic minorities in Kodaikanal, including Adivasi and Dalit communities, have been disproportionately exposed to illness, disability, and death.

Although Unilever denied that women worked in the factory's mercury section, women were indeed employed in the packing area as sweepers and cleaners, including in mercury areas (Ministry of Labour and Employment 2011: 213). Environmental racism and the "embodied urban political ecology" (Doshi 2017) of mercury are deeply gendered: women confronted not only toxic pollution at the factory but also social discrimination. As Shweta Narayan (Shadaan 2017: 39), a legal researcher involved in the Kodaikanal struggle, emphasizes,

> A lot of women have reported repeated miscarriages, abortions, or children born with severe disability. We have documented cases where women—because they had repeated miscarriages—were abandoned by their husband, or divorced because they could not bear children. There have also been cases where in the event of a child with a disability, the responsibility of the care was primarily on the woman, or cases where the woman and the child with a disability were abandoned and basically turned away from the husband's family.

The case of Unilever's toxic racism in Kodaikanal requires an analysis of what Ranganathan (2022: 259) calls "environmental unfreedoms in India" and the ways in which "they are sustained along caste, class, and gender lines, and that not infrequently, are death-dealing."[1]

In response to Unilever's environmental racism, activists planned regional and global advocacy campaigns to "build pressure" on Unilever's shareholders and the Tamil Nadu Pollution Control Board (Chennai Solidarity Group 2018). Workers staged peaceful protests outside Unilever's shareholder meeting in Mumbai and held up placards exclaiming, "Dear Unilever Shareholders, we made you rich and your company poisoned us!" (*The New Indian Express* 2015). After 15 years of struggle, workers and activists announced in 2016 that Unilever had settled with 591 former

[1] See also Guru and Sarukkai (2019) and Sharma (2022).

mercury workers.[2] Community-based organizations—the Chennai Solidarity Group, Jhatkaa.org, Greenpeace, and The Other Media—spearheaded campaigns that involved not only grassroots protests but also litigation, advocacy reports, and a viral video campaign featuring the Tamil rapper, Sofia Ashraf.[3] Although Unilever has compensated its workers, the campaign is not over: Unilever has failed to clean up Kodaikanal. "The company's proposed clean-up", according to the Chennai Solidarity Group (2018), "will leave behind 20 times more mercury in the soil than is considered safe in the United Kingdom, and 66 times more than levels considered safe for soil, plant, and animal life in the Netherlands." Unilever's failed remediation of Kodaikanal, which falls woefully short of the standards employed in the United Kingdom or the Netherlands, is yet another instance of how the global political ecology of toxic mercury is shaped by the logic of environmental racism.

3. PEOPLE'S SCIENCE

According to Unilever's estimate, 1.2 tonnes of toxic mercury have been discharged into Kodaikanal—the home of ecologically sensitive forests and endangered species such as the white-bellied Sholakili bird. Mercury threatens to seep into the food cycle of the Sholakili, which subsist on shield-tailed snakes and cicadas (Kumar 2021). Yet, there is no publicly available data on how mercury has impacted the food chain. The writer and activist Nityanand Jayaraman, who has been active in the Kodaikanal campaign since 2001, argues, "[a]ny policy for remediation of contaminated sites should be based on sound science. And science is sound when scientists and their work are subject to public scrutiny" (Jayaraman 2015). Environmental regulators, including the Tamil Nadu Pollution Control Board, have refused to carry out an independent assessment of the ongoing mercury contamination in Kodaikanal.

People's science rooted in place-based knowledges demonstrates how mercury continues to circulate through forests, waterbodies, and villages in the hills and plains through the Pambar and Varaha rivers. In 2015, Community Environmental Monitoring (CEM)—a community-based organization that has also been involved in legal campaigns to hold Unilever accountable for its role in the Kodaikanal disaster—collected 14 samples of lichen, moss, water, and sediment from 4 locations outside of the factory. Conducted according to the guidelines of the Bhabha Atomic Research

[2] For an analysis of the limits of legal settlements within the context of industrial disasters, see Fortun's (2001) *Advocacy after Bhopal*.

[3] See Rolling Stone India's (2015) "Watch: Mumbai-based Rapper Sofia Ashraf's Kodaikanal Won't".

Centre in Hyderabad, the study indicates high levels of mercury in the moss, sediment, and lichen samples. The CEM report is an exemplar of what Osborne (2015: 843) calls "public political ecology"—a praxis of community-based knowledge production and earth stewardship—at a "moment of ecological crisis."

While it is difficult to measure the extent of mercury contamination in the air, lichens serve as a measure of atmospheric mercury concentration. Lichens do not have roots; they absorb wet and dry matter from the atmosphere, including mercury. The CEM (2015: 4) study reveals that lichen sampled in the Pambar Shola Reserve Forest contained as much as 53 mg/kg of mercury, which exceeds the threshold of 1 mg/kg, and indicates above-normal mercury background levels. The study also reports that sediment samples—collected from a stream that flowed out of the factory site—contained 1.52 mg/kg of mercury and thus exceeds the higher range of norms used by the US Environmental Protection Agency. Once mercury is deposited into waterbodies, it bioaccumulates in flora and fauna across the food chain. The high levels of mercury in sediment samples from the Pambar Shola suggest that mercury continues to contaminate the Shola watershed through the Pambar river that "runs through several villages to join the Varaha River" (CEM 2015: 5).

The Pambar Shola forests are not empty wilderness but an anthropogenic landscape that has long been a source of livelihood, history, and culture for Indigenous communities in the Western Ghats (Morrison and Lycett, 2014: 159–160). While mercury has now accumulated in the vibrant green and white tissues of the lichens of the Pambar Shola forest, these lichens have been, and continue to be, integral to the livelihoods of the Palaiyar Adivasi (Indigenous) community who depend upon the Sholas. The Palaiyar collect edible lichen (*kalpasi*) growing on rocks and trees, which is used in masala powders for cooking. Collecting lichen in forests requires a deep knowledge of the forests and their dangers: from leopards, elephants, and snakes to the risks associated with climbing trees during monsoons. All of this work is done with deep reverence for the forests that make life in Kodaikanal possible. As the Palaiyar writer, Murugeshwari (2022), observes,

> To collect lichen, the Palaiyars use a small chisel ('*uli*' in Tamil) to get it off the rocks and trees. When they go into the forest, those who lead the way break and drop small twigs or large leaves to show the way for those who follow. They all gather together and pray to their gods of the forests—asking that they remain safe and also that no damage is done to the forest by them. They are very particular that no harm comes to the sholas and to the animals and birds living in them.

The struggle against Unilever's toxic racism continues. In 2020, Unilever clear-felled 425 trees in Kodaikanal, which, as ecologists and environmentalists have pointed out, enabled toxic mercury to circulate unevenly across the region (Kumar 2021). Environmental racism deems particular lives and lands to be worthy of "environmental protection", while Indigenous and frontline communities like the Palaiyar Adivasis are exposed to toxic mercury. In the words of the Chennai Solidarity Group (2018)—which continues to fight Unilever's use of double standards—Kodaikanal remains a site of "Unilever's unending racism". In Kodaikanal, people's science and place-based knowledges demonstrate how the dangerous accumulation of mercury in lichens—a vital ingredient in the lands, histories, and cultures of the Palaiyars—perpetuates interlinked structures of global capitalism and environmental racism, decades after Unilever's thermometer factory closed.

Ethics Statement: I hereby confirm that this study complies with requirements of ethical approvals from the institutional ethics committee for the conduct of this research.

Data Availability statement: The data used to support this research is available in a repository and the hyperlinks and persistent identifiers (e.g. DOI or accession number) are stated in the paper.

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REFERENCES

Chennai Solidarity Group. 2018. "Music Video Spotlights Unilever's Double Standards in Mercury Cleanup." *Kodai Mercury*, June 29, 2018. https://kodaimercury.org/press-release-music-video-spotlights-unilevers-double-standards-mercury-cleanup/ .

Community Environmental Monitoring. 2015. *Report of Lichen, Moss and Sediment Sampling Around the Premises of Hindustan Unilever's Mercury Thermometer Factory in Kodaikanal*. Chennai: The Other Media.

Doshi, Sapna. 2017. "Embodied Urban Political Ecology: Five Propositions." *Area* 49(1): 125–128. https://doi.org/10.1111/area.12293 .

Fortun, Kim. 2001. *Advocacy after Bhopal: Environmentalism, Disaster, and New Global Orders*. Chicago: University of Chicago Press.

Gill, Bikram Singh. 2021. "A World in Reverse: The Political Ecology of Racial Capitalism." *Politics* 43 (2): 1–16. https://doi.org/10.1177/0263395721994439 .

Guru, Gopal, and Sarukkai, Sundar. 2019. *Experience, Caste, and the Everyday Social*. New Delhi: Oxford University Press. https://doi.org/10.1093/oso/9780199496051.001.0001

IPT. 2003. *The Indian People's Tribunal Report on the Alleged Environmental Pollution and Health Impacts Caused by the Hindustan Lever Mercury Thermometer Factory at Kodaikanal*. Mumbai: Indian People's Tribunal on Environment and Human Rights.

Jayaraman, Nityanand. 2015. "Of Contamination and Cover-ups." *The Hindu*, August 26, 2015. https://www.thehindu.com/opinion/op-ed/nityanand-jayaraman-comment-of-contamination-and-coverups/article7579454.ece .

Kumar, Vinoth N. 2021. "Mercury Poisoning has Sholakili, the Pride of Kodaikanal, at Risk." *The Federal*, October 4, 2021. https://thefederal.com/states/south/tamil-nadu/mercury-poisoning-has-sholakili-the-pride-of-kodaikanal-at-risk/ .

Ministry of Labour and Employment. 2011. *Ponds Hindustan Unilever Ex-Mercury Employees vs M/S Hindustan Unilever Ltd*. Mumbai: Directorate General Factory Advice Service and Labour Industries.

Morrison, Kathleen, and Lycett, Mark. 2014. "Constructing Nature: Socio-Natural Histories of an Indian Forest." In *The Social Lives of Forests: The Past, Present, and Future of Woodland Resurgence*, edited by Susanna B Hecht, Kathleen D Morrison, and Christine Padoch. Chicago: University of Chicago Press.

Murugeshwari. 2022. "Living in and Around the Sholas: The Palaiyars of Kodaikanal." *The Kodai Chronicle*, October 30, 2022. https://www.thekodaichronicle.com/community/living-in-and-around-the-sholas-the-palaiyars-of-kodaikanal/ .

Osborne, Tracey. 2015. "Public Political Ecology: A Community of Praxis for Earth Stewardship." *Journal of Political Ecology* 24 (1): 843–860. https://doi.org/10.2458/v24i1.20970

Peet, Richard, Robbins Paul, and Watts Michael. 2011. "Global Nature." In *Global Political Ecology*, edited by Richard Peet, Paul Robbins, and Michael Watts. London and New York: Routledge. https://doi.org/10.4324/9780203842249

Pellow, David N. 2007. *Resisting Global Toxics: Transnational Movements for Environmental Justice*. Cambridge: MIT Press. https://doi.org/10.7551/mitpress/7479.001.0001

Rajan, S Ravi. 2001. "Toward a Metaphysic of Environmental Violence: The Case of Bhopal Gas Disaster." In *Violent Environments*, edited by Nancy Lee Peluso and Michael Watts. Ithaca: Cornell University Press.

Ranganathan, Malini. 2022. "Caste, Racialization, and the Making of Environmental Unfreedoms in Urban India." *Ethnic and Racial Studies*. 45 (2): 257–277. https://doi.org/10.1080/01419870.2021.1933121

Rolling Stone India. 2015. "Watch: Mumbai-based Rapper Sofia Ashraf's Kodaikanal Won't." https://rollingstoneindia.com/watch-chennai-based-rapper-sofia-ashrafs-kodaikanal-wont/ .

Shadaan, Reena. 2017. "Mercury Exposure in Kodaikanal, India: Ex-Workers v. Unilever. An Interview with Shweta Narayan." *Women and Environments*, 98/99: 37–41.

Sharma, Mukul. 2022. "Caste, Environment Justice, and Intersectionality of Dalit–Black Ecologies." *Environment and Society: Advances in Research*. 13: 78–97. https://doi.org/10.3167/ares.2022.130106

The New Indian Express. 2015. "Mercury Pollution-hit Kodai Unilever Ex-workers Protest at Firm's Mumbai HQ." *The New Indian Express*, June 30, 2015. https://www.newindianexpress.com/cities/chennai/2015/jun/30/Mercury-Pollution-hit-Kodai-Unilever-Ex-workers-Protest-at-Firms-Mumbai-HQ-776794.html .