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YELLOW RAIN: A RECKONING AND RE-INVESTIGATION INTO THE DISMISSING OF HMONG ALLEGATIONS

written by *Guest Contributor* | December 8, 2021



Lately, I've been consumed with the need to dig. That's how I ended up one summer rummaging through boxes of declassified documents at the National Security Archive, a non-profit archival institution housed in the library at George Washington University. Among the boxes were an assortment of paper relics, from declassified cables bound by brittle and defunct rubber bands, to fragile newsprint bearing headlines from another era. There were also handwritten notes scribbled onto yellow pads, copies of clipped reports, and old images cut out from magazines.

Over the span of a week under the fluorescence of a small communal reading room, I carefully sifted through sheet after sheet. As a Hmong American poet, I come from a culture few have even heard of, so it was both exciting and unsettling to encounter these boxes with representations of and allusions to Hmongness all over its pages. The essence was there in the redacted re-tellings of specific events, in the referencing of locations within Laos, and in the recalling of testimonies. To see how much had been documented was overwhelming. And it was all here, teeming in its language of coding, processing, routing, and excised bureau-speak, proffering itself for anyone's knowing to the extent that the redactions would allow.

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When I finished at the archive, I felt as though my hands had been doused in a fire of the past. As though in my wrangling with the flames, I had managed to sieve through a decade of ashes to be re-tethered and transported into the present. I left with 2,911 pages.

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When the United States withdrew from its war in Vietnam in 1975, it could not have begun to fully comprehend the magnitude of its wreckage. Entire regions devastated by military conflict. A people fled and dispersed throughout the globe. A population of veterans traumatized. A generation of grief. All of the dead. And countless more consequences.

Relegated into a no-man’s-land during the war, Laos became a buffer to shield nearby countries from the impending threat of communist influence. Spatially landlocked and congested between the escalation of communism to its right (Vietnam) and the fragility of democracy to its left (Thailand), Laos had been home to the Hmong who settled primarily in the country’s northern highlands.

In the decades leading up to the war, favoritism and manipulation carried out by French colonial rulers in Laos pitted Hmong officials precariously against one another. Colonizer tactics of assigning power and creating civil discord between the “natives” deepened the chasm of envy and animosity, resulting in various clan leaders taking up arms on opposing sides of the war.

Should Laos fall to the communists, the United States, in particular, feared that neighboring countries would invariably suffer the same fate, prompting what then became a large-scale covert military operation. Arms, ammunition, food, and supplies began flowing into Laos. The Central Intelligence Agency (CIA) gathered, enlisted, and in some cases, forced, tens of thousands of Hmong men and boys in northern Laos to fortify its counterinsurgency infrastructure.

These soldiers were trained to wage guerilla warfare under the military command of the late General Vang Pao who was regarded as both legendary and ruthless. In a 1969 declassified memo to President Nixon, routed by way of former Secretary of State Henry Kissinger who served as advisor to Nixon at the time, Richard Helms, then Director of the CIA, wrote:

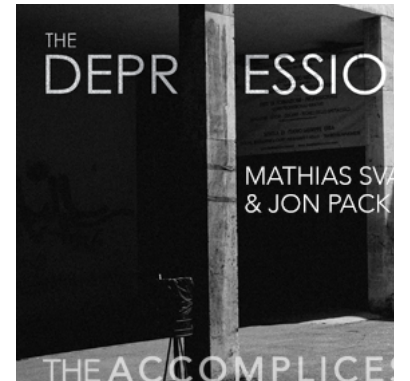
“ A short time ago Vang Pao was at a command post on Phou Keng, a key hill position on the northwestern side of the Plain of Jars when it came under counterattack by the enemy. Vang Pao, who was eating lunch at the time, dropped his sticky rice and was the first person to reach the 81 MM mortar located next to his command post. He personally fired the first twenty or thirty rounds into the enemy and then directed the troops into the final assault, which captured and secured a strategic hilltop.

Through this bravado of diligence and cold-blood, Vang Pao led a campaign on behalf of the United States, which stood poised to benefit from the battlefield exploits and industriousness of its Hmong army. All this, in spite of 1962 international agreement proclaiming that Laos maintain a status of neutrality in the region.

This became the Secret War.

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Like many wars perpetrated during this era, the Secret War thrived on its exploitation of the local population. As a proxy war that served the political interests of global powers, it cunningly spared the Americans the necessity of sending its own forces to serve on Laotian ground, leading naturally to higher numbers of Hmong casualties.



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The war’s covert undertaking appeared to circumvent and function as a workaround to the neutrality laws. To espouse a guise of neutrality, the US tactic seemed straightforward: discreetly train the local “natives” to do the work of war, give them weapons to carry out a foreign agenda, and then abandon ship if the mission fails. The ending is always predictable: leave the “natives” to fend for themselves. Not unlike what continues to happen today and has already happened in Cuba, El Salvador, Afghanistan, and other parts of the world.

This scheme of surrogate warfare allowed the U.S. to wage war in Laos without necessarily having to pull a trigger or launch a grenade. It makes sense the Secret War was a conflict rooted in the larger theatrics of the Cold War, a time of tenacious rivalry, two-faced antagonizing, and charading of dominance between the United States and the former Soviet Union.

When the communists gained victory in Vietnam, the US wars in Southeast Asia officially ceased in 1975. Operations were aborted, equipment abandoned, personnel and troops evacuated. Worst of all, hundreds of thousands of refugees were left behind to fight or flee on their own. In the northern regions, Hmong civilians became the target of an aggressive retribution campaign conducted by the Pathet Lao who led the communist movement in Laos allied with and receiving military support from the North Vietnamese.

After Vang Pao retreated into exile, many of his former soldiers and resistance fighters were hunted, tortured, and executed. These men who had fought on the side of the United States were now alone without a sustainable means to defend themselves.

Thus began the perilous multi-week trek by foot through the forests of Laos, undertaken by large groups of civilians, at times numbering in the thousands consisting of women, children, elders, and village leaders. They often hid by day and traversed by night. Having deserted their homes, set free their livestock, and forsaken their fields and harvest, they fled west toward the Mekong River and into Thailand, seeking asylum as refugees.

Amid the exodus and the era’s notoriety for diplomatic maneuverings surfaced the controversy surrounding allegations of a chemical biological warfare substance called “yellow rain.” The convoluted nature of the Secret War—tinted, amplified, and motivated by the tenuous climate of the Cold War—set the stage for the debacle that was to come.

And so it happened that the end of the war signaled the beginning of yellow rain.

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As refugees continued to flee Laos, stories and reports began to emerge in 1976 that the Pathet Lao and North Vietnamese troops, assisted by the Soviet Union, were allegedly committing chemical biological warfare against the Hmong. In 1979, this substance, which became known as yellow rain, made its official media debut. Two French doctors in Laos indicated to the press they had treated refugees displaying unusual illnesses symptomatic of a chemical biological attack. These ailments included vomiting, nausea, diarrhea, respiratory issues, chest pains, dizziness, blurred eyesight, blisters, and lesions. There were even cases of hemorrhaging and bloody diarrhea culminating in death.

In the camps at Ban Vinai and Nong Khai in Thailand, many arriving refugees complained of these symptoms. They described a poisonous aerosol substance released from aircraft, descending in a way that sounded like and resembled rain. The specks ranged in texture, from powdery smoke to a sticky, viscous-like consistency, falling on the ground, rooftops, trees, and onto their skin and clothing.

They described this substance as “chemi” or “medicine from the sky.” And it appeared in a variety of colors that included red, green, white, black, with yellow being the most frequent. Reports focused on the Phou Bia area, a largely inaccessible mountainous region in northern Laos that became a post-war stronghold for

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Hmong resistance fighters. Many people recounted that anyone who touched or drank from contaminated lakes or rivers would become sick and eventually die.

It's uncertain how many refugees died from yellow rain in Laos. But a 2005 dissertation by Dr. Rebecca Katz, an epidemiologist and Associate Professor-Director of the Center for Global Health Science and Security at Georgetown University, has helped shed some light. Katz's research revealed that a chemical or toxin substance had been likely inflicted on the Hmong. She argues the Hmong casualties recorded by the US government should have been far higher. Those stats, quantified in a 1982 State Department report, counted 6,395 names of Hmong victims but neglected to include whole villages that perished from the attacks. Other figures given by authors of yellow rain studies and human rights organizations ranged as high as 20,000 to 40,000 Hmong casualties.

Elsewhere in the world, yellow rain's suspected use dates to the mid-1960s, starting in Yemen with reports that Egypt had used yellow rain during the Yemeni civil war of 1963-67. Then, in 1978, concurrent with the timing of the Hmong charges, Khmer Rouge soldiers in Cambodia also related similar attacks and symptomology, followed by Mujahadin resistance fighters in Afghanistan reporting in 1979. Later claims surfaced in Azerbaijan, Mozambique, and during the Iran-Iraq War. And while each of these occurrences were treated with varying levels of enquiry and debate, it was in the case of the Hmong that yellow rain became largely entangled.

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Over the span of eight years beginning in 1978, the US government led an extensive and confusing investigation into yellow rain. Spurred mostly by a politically-charged desire to cast blame, the government was determined to get to the root of the matter.

In 1978, the United States issued an official *démarche* to Laos, Vietnam, and the Soviet Union. All three countries rejected the charges brought against them. The following year, two US State Department representatives visited the Thai camps to interview refugees. In a report of their findings, they indicated that the Hmong were likely coming under attack from a possible chemical weapon. Later that same year, the Pentagon deployed a medical team of Army officials who came back reporting the need for a questionnaire that could be used to survey refugees. With several agencies involved and very little coordination among them, such a questionnaire was not created and ready for distribution until a year later.

From the late-1970s to mid-1980s, Hmong refugees offered thousands of samples to be shipped all over the world for testing. This included biomedical specimens of blood, urine, vomit, and sputum, to environmental artifacts of leaves, twigs, scrapings from rocks, and other vegetation as well as their own clothing in some cases.

Agencies that were directly involved with the testing included the US Embassy in Bangkok in charge of coordinating the collection of samples, the US Army's Foreign Science and Technology Center (FSTC) assisting in the routing of samples, the Chemical Research and Development Center (CRDC) at the Aberdeen Proving Ground in Maryland responsible for testing environmental samples, and the Armed Forces Medical Intelligence Center (AFMIC) in Fort Detrick, Maryland responsible for testing biomedical samples.

The bureaucratic process plagued the testing and analysis of samples, and the government's enquiry, according to Katz, was rife with logistical barriers. Among the agencies involved, particularly the State Department and the Department of Defense, no one seemed to fully know what they were responsible for doing. Anything that could have happened to hinder the investigation happened: the government's lack of a clear testing methodology to properly assess the samples, specimens misplaced or damaged in transit, poor packaging leading to the degradation of samples, a growing backlog waiting to be analyzed, funding delays,

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past due invoices, concerns as to the availability and match of control samples, frustrated refugees waiting on their test results, and other similar scenarios. Years languished in these ways.

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As the government did not have the ability to test for the types of toxins in question, AFMIC rerouted biomedical samples to academic scientists around the country. Very little was known, then, as to the potentially dangerous impact that mycotoxins could have on humans and how much of it might naturally exist in the world. One such individual who had worked with and published research on mycotoxins was Dr. Chester Mirocha at the University of Minnesota.

In July 1981, Mirocha tested and found suspicious levels of trichothecene mycotoxins on leaf samples he received from AFMIC. Mycotoxins are a lethal group of secondary metabolites created by different types of fungi. Fusarium, a subdivision of mycotoxins, is a substance commonly found around the world that can develop from fungi and mold activity, or it can naturally grow in crops and plants. Infamous for causing disease and death in humans, fusarium can produce harmful toxins like trichothecenes.

Mirocha's analysis revealed mixtures and levels of trichothecenes not fully understood nor entirely known to exist in Southeast Asia. And little did anyone suspect at the time that such a finding would provoke a larger debate on the distinctions between a substance as either naturally-occurring or manmade.

The discovery raised other concerns aside from the illnesses and deaths. One or more countries had potentially violated the 1972 Biological Weapons Convention (BWC) agreement. The multilateral treaty was adopted to curb arms proliferation, and it banned the storage, procurement, manufacture, and development of biological weapons or toxins for use in a time of war or in other offensive situations. But as can happen with grand international agreements that are penned and signed to posit a semblance of solidarity, something always gets left out. And in this case, the BWC failed to include parameters for how to measure and confirm compliance.

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A few months after Mirocha's discovery, the State Department took decisive action to flex its ownership of the yellow rain narrative.

Sterling Seagrave, a journalist who had been following the case and formulating his own mycotoxin theories, had written a book on yellow rain scheduled to be released on September 24, 1981. This presumably did not sit well with the State Department who was eager to flaunt its findings to the rest of the world, and to be the first to do so. Seagrave's book was released as scheduled and went on to receive reviews in several outlets, including the *New York Times*. Most significant of all was the book's impact on foreign policy.

On September 13, 1981, a week and a half ahead of Seagrave's book release, then Secretary of State Alexander Haig made a startling announcement to the press while in Berlin. Haig declared, rather prematurely, that the US had evidence to confirm the Soviet Union and its allies violated the BWC by using chemical weapons against refugees in Southeast Asia and Afghanistan.

In the months that followed Haig's announcement, the yellow rain enquiry ballooned into a media spectacle with one news agency going so far as to conduct its own investigation. Dr. Joseph Rosen of Rutgers University, another well-known mycotoxin expert, was contracted by the ABC television network to analyze an environmental sample that its news crew had brought back from a trip to Laos. Rosen's results, released in

December 1981, revealed traces of trichothecenes along with polyethylene glycol, a manmade ingredient that could have been added to strengthen the effectiveness and distribution of yellow rain.

In 1982, the State Department provided Congress with two special reports. The first report was released in March, followed by an updated version in November under Haig's successor, Secretary of State George Shultz. All of it seemed too much, too fast. Some newspapers even suspected a ploy against the Soviets and began to interrogate the veracity of the government's charges. Other print media outlets defended the claims and the actions of the State Department.

In an address at a United Nations Session on Disarmament that June, President Reagan reaffirmed the United States' stance and accused the Soviet government of perpetrating chemical and biological warfare in breach of international treaties.

Meanwhile, the Soviets continued to refute the claims despite its history of research into and experimentation with mycotoxins. A 1979 anthrax epidemic in the Soviet town of Sverdlovsk called their culpability further into question. The Soviets rejected the Sverdlovsk charges, claiming the outbreak occurred as a result of spoiled meat. (More than a decade later, in May 1992, months after the collapse of the Soviet Union, Boris Yeltsin would then admit to the press that the outbreak in Sverdlovsk occurred as a result of an accident at a secret government research facility operating in violation of the BWC).

The international community had also taken an interest in yellow rain. France, Canada, Australia, and other governments began their own investigations leading to conflicting and largely unpublicized results. In January 1982, however, British scientists made an interesting discovery. While they did not detect any traces of trichothecenes in the samples they tested, they found grains of pollen. This finding would foreshadow other events and theories soon to impact the trajectory of the debate.

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In the final months of 1982, one of the agencies involved in the testing of samples, the US Army's Chemical Systems Laboratory (CSL, whose name later changed to Chemical Research and Development Center, CRDC), began to cast doubt over Mirocha's initial findings. They re-analyzed his positive samples to suddenly find no traces of trichothecenes. It's been argued in Mirocha's defense that the sample had already deteriorated over the span of a year. By that time, it would have been nearly impossible to make a positive identification. Katz further specifies in her dissertation that all pre-1984 results from CSL/CRDC should have been discarded as they did not achieve full testing capability until post-1984.

The United Nations also embarked on its own investigation. Teams of representatives from various countries visited the camps, first, in the latter part of 1981, followed by a second visit in 1982. The final report issued by the UN Group of Experts vacillated between two outcomes. While they could not verify if the attacks happened, they still could not discount the possibility that something might have happened based on the available circumstantial evidence.

Finally, in an attempt to streamline efforts between the State Department and the Department of Defense, the government dispatched a Chemical Biological Weapons (CBW) team to Southeast Asia from 1983 to 1986. As on-site staff members, the team communicated and coordinated logistics with agencies back in the US. But investigators soon found themselves challenged by cultural, linguistic, and cosmological worldview differences. For instance, the Hmong did not measure time by months, days, years, hours, and minutes, but rather by moon cycles, seasons, and harvests—making it more difficult to precisely determine dates and times of attacks.

And when they re-interviewed refugees, the team observed inconsistencies in some of the Hmong testimonies. Some refugees recanted their accounts to say they had not experienced an attack. Some changed

their stories to say they had heard about the attack from others. Then there were other refugees who, as purported by the CBW team, might have been collecting and submitting any suspicious leaf and offering compliance in hopeful exchange for asylum or medical aide. The government's view of Hmong credibility diminished as a result. Many of the accounts, post-1980s, were unfortunately discarded.

It's unknown what prompted some refugees to recant or change their stories. Whether they were threatened by external forces, offered bribes to remain silent, or whether they did so willingly of their own volition. It's been speculated, however, that some Hmong recanted their story out of fear for their lives and those of loved ones.

In a 1984 report to Congress, President Reagan continued to condemn the Soviets. By this time, the frequency of yellow rain reports had slowed. The government took credit and claimed success in their campaign to expose and disgrace the Soviets.

Then, in the fall of 1986, largely as a result of funding issues, the government officially terminated its CBW investigation and the team returned to the US. Their final report, no different from the conclusions of the UN Group of Experts, failed to offer anything substantive or concrete: there was not enough information to make a plausible case for or against yellow rain.

That same fall, Hmong resistance fighters gained access to a communist storage facility in Laos. They recovered a mysterious tag written in Russian with instructions for how to decontaminate oneself and one's equipment. Like so much surrounding yellow rain, there is no further information to determine if anyone in the US government followed up on this finding.

Perhaps it's no coincidence that the timeline of the yellow rain events almost run parallel to the US effort to rebuild its weapons arsenal. Under Nixon's leadership, production of chemical biological weapons came to a permanent halt in 1969 as part of the US effort to disarm. In the midst of all this, there was still the question of how to properly demilitarize and what to do with the aging stockpiles.

Over a decade later, these issues resurfaced in the administrations of Carter and Reagan, both of which advocated for funds and resources to resurrect the production of chemical biological weapons. Carter allocated \$3 million dollars toward the construction of a binary chemical weapons factory in Arkansas. Reagan pursued similar policies, bill after failed bill, keeping pressure until Congress relented. And in December 1987, the United States once again began to manufacture chemical biological weapons.

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The yellow rain debate included a contingent of naysayers who rejected the government's allegations. Most vehement among them was Dr. Matthew Meselson, a scientist at Harvard who had consulted for the government in the past and had been tracking the issue of yellow rain.

A specialist in chemical and biological defense, Meselson had long been a proponent of increased arms control dating back to the Nixon era. His advocacy helped promote greater international collaboration leading to the BWC. Despite the agreement's failure to delineate clear guidelines on matters of compliance, Meselson lauded and took pride in the treaty, observing it as progress in the pursuit to eliminate biological weapons and their use around the world.

Having exerted much initiative and labor, Meselson seemed reasonably anxious to safeguard the treaty and its goals. It's even been speculated that his over-eagerness to ensure the treaty's success might have come at the expense of the truth. For the sake of preserving the purity of the treaty and its success to which he was committed, Meselson might have been willing to look the other way, possibly ignoring legitimate violations in an attempt to avert further conflict.

Enter the honeybee.

Coinciding with the release of the updated State Department report under Shultz, the government announced at press briefings in November 1982 the finding of pollen in their test samples. AFMIC and State Department officials suggested that the pollen, similar to the kind gathered by honeybees, might have been utilized as an aerosol mechanism to improve delivery of the toxin for inhalation as particles into the lungs when it dried.

Skeptical of the government's pollen assessment and accusatory stance toward the Soviets, Meselson obtained from a Canadian scientist a leaf and pebble sample from which to begin his own enquiry. The following year, in 1983, Meselson met Dr. Joan Nowicke, a botanist and pollen expert at the Smithsonian Institution to whom he passed on the samples. And after examining them, Nowicke discovered an assortment of surprisingly varied spots that resembled the pollen transported by insects.

Then, in April 1983, Meselson convened a conference in Cambridge, Massachusetts, to further discuss yellow rain. A 1991 two-part series published by *The New Yorker* depicted how, as a result of this Cambridge conference, a peculiar and coincidental trail of contacts and clues began to emerge. One of the conference attendees, a botanist named Peter Ashton, along with Meselson, later reached out to Thomas Seeley, a bee expert at Yale, who responded that the spots on the samples might be honeybee fecal droppings expelled during mass cleansing flights. In other words, Seeley suggested that what had been postulated as a biological weapon was perhaps just "bee shit."

That same night in his yard where he had seen bees, Ashton found to his amazement small yellow spots. Meselson, on the other hand, began to hear stories of people who had also noticed annoying yellow spots on their cars. He then visited Nowicke at the Smithsonian's Museum of Natural History in Washington, D.C. where they walked around in the parking lot in search of yellow spots. And voilà, to their astonishment, they conveniently discovered that Nowicke's own car had been coated with spots from the bees living on the museum's rooftop hive.

These cursory observations convinced Meselson that the Hmong had been severely mistaken. Though the bee feces theory was only a hypothesis at this stage, Meselson must have believed it was feasible enough of a premise to extinguish the allegations of yellow rain as a biological weapon, to reverse the claims of Soviet violation, to preserve the sanctity of the BWC, and to invalidate the Hmong testimonies.

No more than two months elapsed after the Cambridge conference before Meselson began to promote his bee feces theory. At a conference of the American Association for the Advancement of Science held in Detroit on May 31, 1983, he and his fellow scientists organized a panel to announce the bee feces findings. As the media circulated stories on Meselson's "intriguing" theory, the debate on yellow rain evolved in a way that most could not have anticipated with honeybees now pulled into the spotlight. The government, on the other hand, was far from amused and stood firm in its initial assertions of yellow rain as a biological weapon.

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The next year, In March 1984, Meselson and Seeley embarked on a trip to Thailand to conduct field research on Southeast Asian honeybees. Their experiment consisted of placing sheets of paper on the jungle floor in proximity to hives of *Apis dorsata*. They returned throughout the day to check the paper for yellow spots. When the spots eventually appeared, it confirmed to them that tropical honeybees do, in fact, conduct mass defecation flights, which, in turn, confirmed their belief that yellow rain was simply bee feces. Other than that, they did not uncover much else.

In the months and years following the trip to Thailand, Meselson and Seeley published articles in well-known science journals promoting the bee feces theory. The theory seemed to appeal to anyone with an appetite for sensational headlines as it gained support and publicity from like-minded circles of scientists and major

media outlets. Over time, it became the dominant, default view on yellow rain, lending truth to the notion that if the same story is repeated enough, it eventually becomes fact.

As to the early leaf samples, Meselson rejected Mirocha's findings of trichothecenes. Mirocha's laboratory had handled such toxins in the past, leading Meselson to assume the lab must have been tainted and contaminated.

In 1993, a year after Boris Yeltsin admitted to Soviet complicity in the Sverdlovsk incident, and two years after the dissolution of the Soviet Union, a new treaty banning chemical weapons was forged in the wake of the post-Cold War climate. The Chemical Weapons Convention was not only more thorough in asserting what types of weapons were prohibited, but its measures for compliance and verification were far more stringent than any preceding treaty.

In an essay on the Sverdlovsk crisis, historian Michael D. Gordin offered arguments to the effect that Meselson could have been more insistent in broaching the issue of the Soviet violations once the admission came to light. But Meselson did not seem to be as vocal as he'd been before.

The Soviet Union had already dissolved by that time. With the Chemical Weapons Convention on the horizon, Meselson would still walk away with a major win. The treaties had always been, arguably, his top priority. This suggests the vast lengths Meselson might have gone to defend the integrity of the treaties and preserve the façade of peace which the treaties represent. Even if it meant concealing possible violations or convicting honeybees.

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There is perhaps some viability to the bee theory, but it falls short of explaining several factors. As Katz points out, the theory failed to account for how and why toxins were discovered in blood samples. And it could not explain why other colors, besides yellow, were reported.

And what of the contaminated pork and vegetables fed to refugees in the camp at Nong Khai in 1979, resulting in several fatalities as described in a declassified CIA report? More alarmingly, if yellow rain had simply been the excrement of bees, why were there no reports or shared local knowledge of it prior to 1975? What about the stories of yellow rain recounted in other regions of the world at around the same timeframe?

For Meselson to situate definitive blame on Southeast Asian honeybees at a time when very little was known about their defecation behavior feels resonant of Haig's premature announcement in Berlin. There are too many unpredictable biological variables involved to assert conclusively the culpability of bees beyond a reasonable doubt. From hive absconding to migration patterns precipitated by resource supply and predation issues. From seasonal considerations to climate factors. From defecation periods based on the amount of brood rearing to nest fidelity over the decades. How can Meselson know and prove anything for sure?

As to the political ramifications, the bee theory benefited two groups. First, it abetted the agenda of those who sponsored and lobbied for greater arms-control, allowing for a veneer of peace in fulfillment of the BWC. And secondly, the theory must have been a fortuitous boon to the Soviet government who could then harness it in defense of their innocence.

One group the bee theory did not benefit was the Hmong people. In building his case, Meselson was selective in leveraging the Hmong experience. He had been swift to dismantle the reliability of the Hmong accounts. And yet he turned around and used their testimonies when it served his purpose. For instance, Meselson did not believe the Hmong when they reported yellow rain attacks. But when they recanted their stories, he accepted their recanted versions as truth. In other words, he changed his mind and decided these refugees *did* have the capacity to tell the truth after all. But that capacity hinged upon whether or not their "truth" was in alignment with his version of "truth."

In another example, during his 1984 trip to Thailand, Meselson showed bee feces samples to Hmong refugees and asked them to identify it. But if he had already scorned the Hmong as unreliable and incapable of truth, why was he asking them to visually identify a sample, if perhaps only to entrap them into saying the wrong thing? Why, in his arguments, did he continue to cite anecdotes where the Hmong served as his informant and source of information? It seemed the Hmong were “credible” to him only when they offered information that aligned with his predetermined views.

In 2008, Meselson and his colleague, Julian Perry Robinson, cowrote an essay reflecting back on the yellow rain situation. While they rehashed the same arguments all over again, they also offered this disturbing remark: “None of the alleged attacks was witnessed by a Western observer.” The reinforcement of biased statements such as this one, decades later, speaks to the grossly imperialistic notion and racist claim of the “Westerner” as purportedly more trustworthy and capable of truth. In this day and age, that a Western male would exert his patriarchal nature and assume the facts on his terms, that he would gaslight the most vulnerable, code the truth with what is most convenient for his own legacy, should not come as a surprise to anyone.

It’s fair to acknowledge that refugees who allegedly took advantage of the system—by providing false information or random toxin samples in hopeful exchange for expedited asylum, medical aid, or other much-needed services—added confusion to the investigation. This still does not prove that the attacks did not happen.

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Without a fully coordinated approach, the CBW investigation was rife with setbacks. Mobility issues were a hindrance to the investigation from the start. It often took several weeks to make the journey by foot from Laos to Thailand, increasing the length of time between the date of the attack to the date of arrival into the camp. Some refugees also volunteered to return to Laos to collect samples. In those cases, it took several more weeks, sometimes months, before the samples were finally en route to a lab in the US.

Then rose the dilemma of sample deterioration, which can happen quite rapidly in the case of trichothecenes if not properly stored or transported. The more days and weeks that elapse, the more difficult it can be to identify in a laboratory setting.

Next came problems with the packaging and routing of samples. Many samples were documented as lost in transit, misrouted to the wrong agency, improperly stored during air travel, poorly packaged resulting in cracked vials, or lacking cooling and proper temperature control.

Investigators also encountered difficulties finding and obtaining biomedical samples from a control group in which to compare data and develop a baseline understanding of the overall health of the refugee population. To obtain blood samples from a Hmong populace that had not been exposed but that shared similar living and dietary habits seemed reasonable in theory. In practice, it was far more challenging. Field investigators claimed some due diligence on their part in collecting proper controls, but it’s not altogether clear whether that happened in every case.

Given these impediments, among other barriers, was it realistic for investigators to unearth anything at all? Were they searching in vain for a substance that had already dissipated weeks or months ago?

If the United States, as Katz and other scholars have suggested, had had a rapid response on-site mobile laboratory installed at the refugee camp to conduct immediate testing once refugees and samples crossed into Thailand, there might have been a genuine chance to test for and indisputably find the toxins in question. But once the samples left the camps to be shipped elsewhere, the chase to identify the substance turned futile.

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Competition drove the Cold War as the Soviet Union and the United States found themselves locked in a global race to develop and stockpile an advanced arsenal of military weaponry.

Government leaders and stakeholders in the US who concurred with the need to shore up arms in opposition to the Soviets stood to profit from the yellow rain allegations. Most of these leaders, primarily right-leaning conservatives, exploited the charges of Soviet violations to rationalize increased defense spending on weapons research, development, and manufacture.

These pro-arms supporters clashed with left-leaning anti-arms proponents whose competing ideology advocated for disarmament. Those in favor of anti-arms measures sought to reduce and eliminate the world's access to weapons. And this group of people, which included Meselson and his supporters, may have felt the Hmong allegations of yellow rain would heighten tensions and impede diplomacy efforts. Hence the motivation behind their obstinate efforts to discredit the Hmong testimonies.

While the two sides bickered, it seemed like no one genuinely cared what would become of the Hmong. Partisan conflict forced the Hmong into the middle between the political left and right.

From the pro-arms stance, the Hmong testimonies of chemical biological warfare attacks were likely deemed as a blessing by the right wing, serving as a practical rationale to pressure Congress for more money, more guns, and more bombs. Yet from the anti-arms stance, the Hmong were pitted as liars lacking an intelligent reality. Backwards and detached from a western lens of objectivity. Portrayed as fools.

*

What are the chances that trichothecene mycotoxins were deliberately weaponized for use as a biological weapon? Given precise levels of concentration, is it possible to test weaponized trichothecenes on unwitting subjects, then blame its presence on the natural growth of fusarium in a forest environment? Or call it a phenomenon of nature?

What about the unlikely possibility that the United States—desperate for a quick, economical solution—dumped and disposed of its aging chemical and biological stockpiles into the Southeast Asian jungles?

Or was it because in the midst of a hasty departure resulting in the United States leaving behind unused supplies of riot agents and CS gas, the communists perhaps acquired this inventory and modified it to become yellow rain? It's further known that herbicides and defoliants, such as Agent Orange, were notoriously used during the war leading to destructive impacts on human health and the environment. Could these substances have undergone a chemical reaction with something in the tropical ecosystem to inadvertently produce yellow rain?

And finally, what about the government's sinister testing of chemical and biological substances on the unaware American public? It's worth considering that possibly somewhere along the way, Hmong people might have become human test subjects without their permission, perhaps forced unknowingly to participate in field trials of some kind. Though it could have been viable, this sounds far-fetched, perhaps just as far-fetched and outlandish as the bee feces theory.

So much remains unknown in the matter of yellow rain. And in the absence of definitive proof, there will only ever be more questions.

*

In 2012, the grief over yellow rain resurfaced in the media. The popular podcast and radio show *Radiolab* aired an episode on yellow rain. Hosted by journalists Jad Abumrad and Robert Krulwich along with producer Pat Walters, the episode featured writer Kao Kalia Yang interpreting for her uncle, Eng Yang, who shared his experience of yellow rain.

The segment, which highlighted Meselson and the bee theory, raised concerns as to the credibility of Hmong accounts. As the hosts' questions grew interrogative in favor of the bee theory, Kalia ended the interview.

Then, in an internal post-interview reflection, the *Radiolab* team engaged in a perfunctory discussion of the Secret War. They mulled over this and that, attempting to play devil's advocate with one another in a manner that felt obligatory and much like an afterthought. After a firestorm of response from listeners criticizing Krulwich's behavior, he issued a public apology to Kalia and her uncle. And while it seemed an admirable thing to do, the apology afforded Krulwich an advantageous moment to reaffirm his defense: that he was merely seeking the truth and doing the honest work of a journalist. No hard feelings.

But really, it was as if Krulwich had entered the conversation poised and ready to argue that the Hmong were culpable. That these allegations, which strengthened the government's justification to revive production of chemical weapons, had placed the greater well-being of all humanity at risk. And the Hmong would take first blame if the world had been thrust into another war. As if to place the onus of that outcome—of more war, more weapons, more death—exclusively on the Hmong. In other words, the Hmong charges of yellow rain would dampen and reverse all the hard work that had gone into demilitarizing the world.

The episode fell short of presenting the full story. From failing to offer a proper examination of the Secret War, its genesis and residual consequences framing the unstable climate in which the yellow rain conflict was born into. To neglecting the array of challenges experienced within the CBW investigation as revealed by Katz. From gaps in the bee theory. To the government botching its one chance to present a solid case, how its uncoordinated approach never allowed for a final verdict, forever classifying yellow rain as a cold case leaving a people's perspective to be ridiculed and erased. All of that ache, atrocity, and loss quickly glossed over or simply omitted, further buried inside a western lens of perceived truth.

*

In late 2003 per a request made under the Freedom of Information Act (FOIA), over 8,500 pages of documents related to yellow rain and the government's CBW investigation was officially declassified. This massive purge of information occurred after Katz discovered boxes of yellow rain documents at AFMIC that had been untouched for decades. In fact, one of the boxes came to her by chance when an employee, who happened to see her with the boxes, informed her that he, too, had a yellow rain box in his office which had sat there for ten years. He never once opened it. On the box were the words "Yellow Rain Material: Keep always and forever."

The National Security Archive, having submitted multiple FOIA requests, amassed its own collection related to chemical and biological warfare. Their impressive set of records ranged in broader sub-themes from yellow rain to Agent Orange, Sverdlovsk to the Geneva Protocol, and other subject areas.

Yet in spite of these efforts, the questions linger. Even as the bee feces theory has become the widely-accepted view, there exists to this day a divide in opinion between those who say yellow rain happened and those who say it did not.

I have long been both curious and troubled by the issue of yellow rain. Growing up, my parents did not often mention the war. As a child and teen, I never fully understood it, the reality of the war, the disruption of their lives, and the violent backstory of how they became refugees. The concept of “chemical weapon” had not eluded me though. I had heard about it vaguely, in passing. And while I knew it had something to do with the Hmong war experience, I did not bother with it further.

As a college student, I then learned of the Secret War, its political reverberations and aftermath of flight. It was during this time I also learned in a more exhaustive manner of the yellow rain mystery. I questioned, was it really the bees and how fair was any of it? This led me to start collecting and archiving books and articles on Hmong history, identity, and culture. I was even awarded a small undergraduate book collecting prize from my university’s library.

Almost a decade later in the start of fall 2012 during my first term of MFA study as a poetry student, *Radiolab* aired its contentious episode on yellow rain. That’s when the grief and dawning of this work officially hit me.

Outside of my time in workshops and seminars, I spent a bulk of that first semester, and the following semesters, and part of the summers, scouring online library databases for and copiously reading through journal articles, government reports, books, media pieces, and other writing on yellow rain.

This body of literature swelled to include more than I could imagine. Declassified records. The discovery of Katz’s dissertation. Virtual access to the redacted documents in the AFMIC boxes that were found and analyzed by Katz and made available by *Politics and the Life Sciences* journal. To more combing through online databases, from the CIA to the State Department. To topping it off with a visit to the National Security Archive where I acquired thousands more pages of largely unpublished documents and materials. The initial focus on the Hmong and yellow rain led me to unexpected places, broadening my reach to encompass larger themes: human subjects research, history and experimentation of chemical biological weapons, Soviet and Cold War politics, among other areas.

*

It’s worth wondering: what if State Department officials had not uttered the word “honeybee” during the November 1982 press briefing, in connection with the finding of pollen?

What if Haig had waited a little longer and not made his impulsive announcement in Berlin on September 13, 1981? What if the government had been far more intentional in the presentation of their findings?

It’s possible the Berlin announcement alone might have been enough to change the entire trajectory of the investigation, what we might know and view of yellow rain today.

The pressures of the Cold War must have had some influence on Haig’s decision. But in retrospect, his actions were likely catalyzed by the looming publication of Seagrave’s book. If Seagrave had not attempted to publish a book while the investigation was still underway, then perhaps Haig might not have been rushed into making his announcement.

I am not suggesting that Seagrave as a writer and journalist be deprived of his First Amendment right to free speech nor am I defending Haig’s actions. I am, however, skeptical of both men who seemed eager to be first to break the news on yellow rain. What if Seagrave, then, had waited to publish his book?

And if the United States had not come into Laos, recruited tens of thousands of Hmong men to undertake the Secret War? To fight and die on its behalf? If colonial powers had not staked any hegemonic and territorial claims to Southeast Asia? What then to all of that as well?

Always, more questions.

*

I am the second eldest and the first to be born shortly after my parents began their life in the United States. Had they stayed in the Thai camps for another year, my mother would have certainly given birth to me there and I would have been a camp baby. Instead, she gave birth to me in 1981, in Fresno, California inside the small living room of our apartment situated in a massive complex called Summerset Village, home to hundreds of recently resettled refugee families like my own. Having been born during a year rife with yellow rain debate, the timing feels unusual. To sense as though I was there when it all happened and yet to not have been there at all.

I acknowledge that my own fixation to yellow rain, my own preoccupations to uncover what was in my capacity to find, consumed me in the way it must have consumed those who partook in this fiasco. I picture yellow rain as an expansive lake. And all of us—myself, the CBW investigators, the media, and even Meselson—were sinking into this lake, grasping for an answer to explain it all having succumbed to our own obsessions over these obscure yellow spots.

But even in my mania, I am distinct from my sinking counterparts: my Hmongness cuts through as a dual-edged sword. On the one hand, it might be assumed that my being Hmong obstructs my ability to be neutral or objective. It might even be what discredits me as someone in favor of the Hmong side.

On the other hand, my mania is precisely because *I am* Hmong. My proximity to Hmongness predisposes me to re-interrogate, almost forty years later, what has already been deemed as “truth.” It sets me up to dismantle the anatomy of this “truth,” but more importantly, to demand the possibility of further answers.

*

To disassemble and reassemble yellow rain, I sought refuge in language and poetics. Poetry’s paradoxical and dexterous ability to offer its own kind of truth has been transformative and alchemical for me. I wrote poems, assembled collages, excerpted from documents, wrote more poems, ripped pages up, assembled again, snipped images, and so on. All in an effort to offer another version of yellow rain from my perspective as a daughter of Hmong refugees belonging to a community that was directly affected by it.

This work became my second collection of poetry, *Yellow Rain* (Graywolf Press, 2021). It was a chance to both reckon and resist amid the personal and creative turmoil I experienced throughout the process. I tried with every poem in the book to expand the possibility of what an answer might be. I pushed for each poem to make an offering of personal truth in a world rife with doubt and stagnation. And while poems are not beholden to the truth, I strove for every poem to be an action toward the potential for a new truth to emerge. I have had to go within to reconcile the rational and empirical parts of myself, both optimist and skeptic, yielding and yet continually seeking.

Yellow rain feels like an imposed uncertainty brought on by the mishandling of information for the purpose of political gain and skewing of truth. Yellow rain is the noun of a toxic substance inflicted upon refugees. But it is also, for me, a synonym for confusion. A verb to describe the conflict of knowing something and yet not knowing it. An adjective to define the things we won’t ever have answers for that will always be one or the other, or something else entirely.

Why does it seem to be the case that those who are frequently left in this space of unknowing, those often forced into stagnation and a state of waiting, denied the privilege of an answer or closure to properly grieve their losses, are often people of color, immigrants, refugees, Indigenous communities, and others whose basic

human rights have been violated or put at risk? Who in our society has the access and authority to perpetrate uncertainty? Who in our world has been granted license to assert whether something is true or untrue, whether it happened or did not happen?

To attempt to disprove the tragedy of what happened to the Hmong with regard to yellow rain is a violation of the Hmong shared experience and collective suffering. It cements another layer of damage on top of the damage that already exists from the war, generating yet another crime against the Hmong. It's as if they seek to disenfranchise us from our own loss. To suggest that because our trauma never happened, then our suffering must have never happened either.

The political and scientific deliberations on yellow rain had long fallen off track with the arms issue placed front and center of the debate. Partisan leaders hashing out the need to build up an arsenal versus the need to eliminate it became sidetracked between proving and disproving violations of the BWC. All this, in the end, had never been about finding out what actually happened to the Hmong people.

*

I don't know what I was hoping to find while rummaging through boxes of decades-old reports and declassified paperwork at the National Security Archive. Or what I was anticipating would be revealed by clicking and scrolling through thousands of pages of virtual files. I don't know what state or condition it is in, this long-lost answer. Whether it might still exist somewhere in the world today. Whether it has been cloaked beneath layers of redaction and erasure. Or whether it has already been shredded and burned into oblivion.

Maybe some things must stay hidden before they can return to the fullness of their light. These things remain dormant, waiting for the right moment to resurface to be reckoned with. And these efforts to resurface will happen again and again. For however many iterations and generations and lifetimes it takes. For as long as the dead are willing to wait, until time—in its infinite patience—fractures the past wide open.

Mai Der Vang is the author of *Yellow Rain* (Graywolf Press, 2021), and *Afterland* (Graywolf Press, 2017), winner of the 2016 Walt Whitman Award of the Academy of American Poets, longlisted for the 2017 National Book Award in Poetry, and a finalist for the 2018 Kate Tufts Discovery Award. The recipient of a Lannan Literary Fellowship, she served as a Visiting Writer at the School of the Art Institute of Chicago. Her poetry has appeared in *Poetry*, *Tin House*, the *American Poetry Review*, among other journals and anthologies. Her essays have been published in the *New York Times*, the *Washington Post*, *espnW*, and elsewhere. She teaches in the [MFA Program in Creative Writing at Fresno State](#).



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