Conclusion

In ancient times, incompetent physicians killed people. Nowadays incompetent physicians don’t kill people, but they don’t save people either. They leave them between not dead and not alive. The patient’s illness deepens over time, leading to death eventually. . . . Those who prescribe medicines today tend to offer indiscriminate and static remedies. They cannot detect the illness clearly, nor can they treat it aggressively. This is why the illness cannot be cured.

—GU YANWU, RECORD OF DAILY LEARNING (1695)

Our journey through poisons in medieval China has, I hope, made clear the importance of potent substances in classical Chinese pharmacy and beyond. The paradox of du and its repercussions in many corners of society reveals how this key concept was embodied in pharmaceutical techniques, political agendas, and religious aspirations. At the core of these diverse expressions of du lay the idea of transformation, which was manifested in the following three aspects.

First, classical Chinese pharmacy, from its inception during the Han period, encompassed a wide range of substances, each of which possessed great transformative capacity. No medicine was characterized by a fixed essence or a set effect; in the proper context, any material, even some of the most poisonous, could be harnessed for healing. The idea of the remarkable malleability of drugs, rooted in the ancient philosophical mode of perceiving all things in the cosmos as ceaselessly changing, was central to pharmaceutical practices in medieval China. Drugs in the pharmacy of this period, especially those possessing du, were judiciously prepared and deployed to moderate their potency: dosing, roasting, combining with other substances, attending to the nuances of the changing condition of the patient, and
precision in ritual procedures all mattered. This variety of techniques had already emerged during the Han period and became more elaborate in the pharmaceutical writings of the fifth century as a result of physicians’ growing concern about the quality of ingredients and the safe use of drugs. The prominence of poisons in classical Chinese pharmacy thus reveals the centrality of techniques of intervention for transforming these powerful substances.

Second, in addition to the fluid materiality of the medicines themselves, knowledge of medicines was also subject to transformation as it moved across different political and social spaces. Seventh-century China witnessed the active engagement of the Sui and Tang courts in standardizing drug knowledge and regulating medical practice by producing authoritative texts and establishing new institutions and laws. Yet such knowledge was not solidified by imperial edicts; once reaching local communities, it underwent marked changes contingent on the availability of resources and the needs of local actors. Moreover, knowledge of medicines from the ancient classics was not stable either; it was readily adapted by physicians who were interested in the efficacy of remedies and relied on their own experience to assess the utility of formulas. The making of new medical knowledge was then a dynamic negotiation between political authority and local demands, between textual authority and practical concerns.

Third, medicines, upon ingestion, could profoundly alter the body. This alteration involved not just the restoration of the body to its normal condition, in the case of curing sickness, but also the transformation of the body into higher states of being. This latter pursuit of life enhancement constituted a distinctive feature of Chinese pharmacy and Daoist religion. Poisons figured prominently in this endeavor yet presented a paradox for alchemists and physicians alike: the alluring promise of their power to radically change the body and transcend death was entwined with their ever-present threat to cut life short. Significantly, the elixirated body, manifesting fierce and painful sensations caused by numinous medicines, offered both warning and reassurance for devoted users. Investigating poisons in this context illustrates the importance of bodily experience in mediating the understanding and deployment of medicines.

Furthermore, by situating the study of poisons in the medical, political, and religious cultures of medieval China, this book traces the changing landscape of Chinese medicine via an examination of disparate groups of actors engaged in medical practice and the production of new drug knowledge.
During the Era of Division, physicians from aristocratic families practiced medicine continuously over generations and produced influential pharmacological texts. In particular, the southeastern region became the nucleus of such activities, where a variety of medical and alchemical texts circulated within an intimate network of local elites. In the seventh century, the center of medical activities shifted to the northwestern region, where the unified Sui and Tang empires established their courts. In this favorable political environment, the state assumed an active role in standardizing drug knowledge, regulating the use of poisons, and creating new medical institutions to recruit capable healers. The situation changed in the mid-eighth century, when the An Lushan Rebellion considerably weakened the central government. As a result, the locus of engagement in medicine shifted again from the state to scholar-officials, who became increasingly involved in the making and spreading of pharmaceutical knowledge.

This last transition merits elaboration. The engagement of scholar-officials in medicine was not entirely new in the late Tang period. Su Jing, the director who oversaw the production of Newly Revised Materia Medica (659), and a number of other compilers involved in the imperial project came from this group (see chapter 4). Wang Tao, the author of the formula collection Arcane Essentials from the Imperial Library (752), was also one such figure (see chapter 5). These cultural elites were avidly interested in medicine but did not practice the art of healing to earn a living. Yet starting in the ninth century, more literati, often those who had been frustrated in their political careers, participated in learning medicine, collecting formulas, and sharing useful knowledge of healing with their friends. Liu Yuxi (772–842), who appears in the story that opens this book, was a revealing example. Having been involved in an ambitious but short-lived project of political reform at court, Liu was banished to the far south in the early ninth century, where he collected formulas, often based on his own experience, that he hoped could protect him from the dangers of the new physical environment.\(^1\) His autobiographical story discussed at the beginning of this book delivers a key lesson on the medical use of poisons, the history of which I then probed throughout the rest of the chapters. Importantly, Liu’s story also offers a political message: he concludes at the end that just as medicines must be used judiciously to cure the body, a leader should adopt forceful and flexible policies to rule the country.\(^2\) The exiled scholar used medicine as a vehicle to advocate his political views.
Liu was not alone in his engagement of medicine for both therapeutic and political purposes. Several of his contemporaries also took part in passionate discussions of medicine. They often focused on the contentious issue of ingesting potent minerals for life cultivation, a practice particularly popular among literati at the time. Liu Zongyuan (773–819), for instance, was enthusiastic about stalactite and had sophisticated knowledge of its morphological varieties and different source locations. In a letter he wrote to his brother-in-law, he demonstrated this detailed knowledge and criticized those who were fixated on single sources they believed to yield the best stalactite. There was also a political message in Liu’s letter: the strategy of selecting capable people for government should not be restricted to specific regions but rather be based on their inherent skills and qualities.³ Han Yu (768–824), the leading literary figure of the time, consumed sulfur in his senior years to invigorate his body, a practice frowned upon by his contemporary Bai Juyi (772–846), a famous poet who also wrote enthusiastically on medicine.⁴ Yet despite his interest in certain minerals, Han Yu condemned the practice of unbridled ingestion of elixirs. In an epitaph he wrote for his grandson-in-law, who died of elixir poisoning, he lambasted the craze, blaming it for numerous deaths. Revealingly, the scholar considered the agonizing experiences induced by elixirs to be pathologies rather than signs of healing. In fact, he directly refuted therapeutic explanations, like those we have seen in _The Record from the Stone Wall_ (see chapter 7), calling them lamentable excuses. An elixir, in his eyes, was nothing but a lethal poison.⁵

Although a comprehensive study of the medical writings of Tang scholars requires future research, I hope these episodes offer a glimpse into the diverse understandings of medicines held by the literati of the ninth century—understandings that were often entangled with their political views. From this perspective, the ninth century marked a new era of Chinese medicine, with the rise of scholar-officials as major producers and circulators of medical knowledge. This engagement became more pronounced in the following Song period (960–1279), when increasing numbers of literati, having failed to enter officialdom, took up alternative careers as practitioners of medicine.⁶

The literati’s active involvement in medicine persisted into late imperial times. But that would be a different moment in the history of Chinese pharmacy, one with waning state interest in producing pharmacological texts, the development of an empire-wide pharmaceutical trade, and the penetration of materia medica knowledge into popular culture.⁷ The practice of employing
poisons for healing, however, remained a vital one. The acclaimed sixteenth-century *Systematic Materia Medica*, for instance, introduces a section of *du*-possessing herbs, including fifty-one powerful plants with diverse medical uses.\(^8\) The administration of these potent substances was a matter of intense debate given their entwined efficacy and danger. The commentary of the eminent seventeenth-century scholar Gu Yanwu (1613–1682), cited in the epigraph, is one such example. Gu’s criticism of medical practice in his time underscores the value of potent medicines—often left unexploited by doctors of the day—to aggressively eradicate illnesses rather than leaving them untreated for the sake of safety. Using poisons in spite of their dangers was a risk that a good doctor had to take. It merits our notice that Gu’s remark had political overtones: he concluded at the end of his essay that selecting officials should adhere to the same rules as those for prescribing medicines. That is, it is better to appoint a specific group of capable people rather than indiscriminately assigning positions to many.\(^9\) Gu’s writings thus follow a long tradition of using medicine as an instrument to convey political messages.

Given the robust tradition of the medical use of poisons throughout imperial China, we may wonder where today’s idea of Chinese drug therapy as mild and benign came from. The answer lies in a refashioning of Chinese medicine in the modern era. With the introduction of Western biomedicine and the rise of scientism in China in the nineteenth and early twentieth centuries, classical Chinese medicine experienced a serious crisis that called its legitimacy into question. During this tumultuous period, advocates for Chinese medicine vigorously negotiated with the state and initiated a series of measures to transform their medical practices and reinstate their authority.\(^10\) The emphasis on the benign naturalness of Chinese drug therapy was hence a strategic rhetoric that highlighted the unique benefits of Chinese medicine, thereby securing its legitimacy against the dominance of modern biomedicine. Furthermore, the dynamics between Chinese and Western medicine shifted in the second half of the twentieth century: the globalization of Chinese medicine meant that it was increasingly perceived as a promising alternative to biomedicine and its attendant shortcomings. This perception often romanticized Chinese medicine as offering a cogent critique of biomedicine, a critique that came at the expense of admitting the heterogeneity, diversity, and complex internal dynamics of multiple traditions of Chinese medical practice developed across vast expanses of time and place. This romanticized impression has carried on to our own time.\(^11\)
But we cannot reduce Chinese medicine to an idealized, unchanging other; we must treat it seriously as an intricate and dynamic system of ideas and practices deeply rooted in history. We cannot just dwell on the striking differences between Chinese and Western medicine; we must also contemplate their meaningful resonances that might illuminate our understanding of medicine today. Poisons offer an excellent perspective for this purpose: my historical inquiry of these potent substances provides fresh insights into our view of contemporary pharmaceutical practice both in China and beyond.

Chinese pharmacy today continues to deploy various potent substances, such as aconite, cinnabar, and snake gallbladders. Informed by Western toxicology, these drugs are, in general, under tight regulation and administered with extreme caution, an attitude we have seen in some of the physicians presented in this book. What was new in the twentieth century is that, with the rise of Western biomedicine, some medical researchers in China, in a strategic move to modernize Chinese medicine, endeavored to incorporate classical pharmacological knowledge into biomedical research in order to develop new remedies. A project widely touted as a success of the program of “the integration of Chinese and Western medicine” (zhongxiyi jiehe) was spearheaded by Tu Youyou (1930–) and her research team, who in the 1970s successfully isolated artemisinin from an herb commonly used in classical Chinese pharmacy, artemisia (qinghao). The drug proved highly effective to treat malaria, which won her a Nobel Prize in Physiology or Medicine in 2015.12

What is less known, but of equal significance, is the story of Zhang Tingdong (1932–), a Harbin hematologist with training in both Chinese and Western medicine. During the 1970s, Zhang led a team in a series of studies of a formula developed by a local practitioner of Chinese medicine. The formula, which contained arsenic, mercury, and toad venom, was popular in the countryside because of its power to treat several types of cancer. Eventually, Zhang’s team identified arsenic trioxide as the key ingredient that was particularly effective for treating patients of acute promyelocytic leukemia (APL). The discovery, which remained obscure for two decades, gained international recognition in the 1990s. Today, arsenic trioxide has become the most effective drug for combatting APL. In this telling example, a potent drug with a long history of use in Chinese pharmacy was successfully translated into modern chemotherapy.13

Yet promising news of the successful use of poisons in biomedicine today should not conceal the dark side of these materials. Reports of medical
accidents caused by drugs in classical Chinese pharmacy have emerged both in China and in Western countries in recent decades, manifesting the danger of certain medicines and the need to regulate their production and administration. One high-profile case during the 1990s concerned the ingestion of a compound drug called Gentian Liver-Draining Pill (Longdan Xiegan Wan). The formula, which first appeared in a seventeenth-century medical text, uses ten herbs, including one called aristolochia (mutong). The herb contains aristolochic acid, which has been shown to induce kidney failure, bladder cancer, and liver cancer. Incidents involving the drug in China, Taiwan, and Europe prompted new biomedical research, public debates, and lawsuits, bringing the issue of safety in classical Chinese pharmacy to the fore. The scientific community strongly recommended a categorical ban on the drug, because the laboratory evidence clearly shows its harm to the body. Its defenders, on the other hand, stressed that it was the use of the pill to treat the wrong patients and conditions, its long-term consumption, and above all, a mistaken substitution for one of the ingredients in its formula that turned the medicine into a poison. In fact, as this book demonstrates, concern about the safe use of medicines has always occupied practitioners’ minds since medieval times. It seems that the debate over this controversial pill will not be settled anytime soon.

Furthermore, by highlighting the hazy boundary between poisons and medicines in classical Chinese pharmacy, this book intimates some compelling resonances between premodern Chinese and modern Western pharmaceutical practices. Just like the Chinese character yao, which has carried a range of meanings throughout history, the English word “drug” can refer to either a curative medicine or an illicit substance. But where do we draw the line between the two? The turbulent history of marijuana use and legislation in the United States is revealing. Condemned and criminalized by the government throughout the twentieth century due to its perceived damage to physical and mental health, the controversial plant has gained recognition in recent decades as a valuable medicine and as a benign recreational substance, leading ultimately to its decriminalization in many states. Accompanying this change, the medical community has shown renewed interest in the potential that some currently illegal psychedelic drugs may have to treat anxiety, addiction, and depression. No drugs are inherently destructive; in the right contexts, they may have potential for transformation into beneficial agents.
Nonetheless, with the rise of the pharmaceutical industry and the proliferation of its products, especially those for the treatment of mental illnesses in the late twentieth century, our bodies have encountered drugs on an unprecedented scale.\textsuperscript{18} As estimated by the National Center for Health Statistics, almost half of Americans have used at least one prescription drug in the past thirty days, and nearly a quarter of the population has used three or more.\textsuperscript{19} This high exposure to pharmaceutical products, in many cases without sufficient public education and effective governmental regulation, has engendered some serious problems, among which licit drug abuse is a conspicuous one. The recent opioid epidemic in the United States is one striking example. Promoted by pharmaceutical companies in 1990s for the relief of chronic pain, opioid medications, when not administered with extreme caution, can become highly addictive, resulting in severe if not lethal consequences. In 2017 alone, more than 47,000 Americans died of opioid overdose, prompting the government to declare a public health emergency.\textsuperscript{20} To solve the problem, coordination between medical practitioners, researchers, and policymakers will be required. At a more fundamental level, the episode again manifests the paradox of drug therapy: handled improperly, a promising medicine can become a deadly poison.\textsuperscript{21}

What is a medicine? We have traveled to some of the earliest recorded periods of Chinese history to look for answers, returning to our own time, where we see both parallels and divergences. This much seems clear: medicines are fluid substances that defy rigid categorizations as curative or harmful, good or bad, legal or illegal. In a sense, it makes little difference whether a medicine is from a seventh-century Chinese doctor’s apothecary, from a plastic bottle in a modern Chinese pharmacy, or from a product catalog of an American pharmaceutical company. The lesson is the same: no essential, absolute, or unchanging core exists that determinately characterizes a medicine; its effects in practice are always \textit{relational}, contingent on technological interventions, sociopolitical conditions, and bodily experiences.

Ultimately, these reflections on medicines invite us into the intimate and complex relationship between the human self and the world. Medicines, a special kind of materiality, become a crucial mediator between the two. Our confidence in the power of these substances to improve us is always entwined with our anxiety about the dangers that they may bring. Despite this uncertainty, the poison-medicine paradox has empowered us to relentlessly experience,
understand, and harness things in the world. We turn poisons into healing agents, adapt these substances to particular situations in our times and places, and even fundamentally transform ourselves to live afresh. It is through these ceaseless changes that potent medicines relieve our suffering, enhance our body, and underpin our perpetual quest for a better life.