ALSO BY MICHAEL POLLAN

How to Change Your Mind

Cooked

Food Rules

In Defense of Food

The Omnivore's Dilemma

The Botany of Desire

A Place of My Own

Second Nature

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This book relates the author's investigative reporting on, and experimentation with, the opium poppy plant (*Papaver somniferum*) and mescaline in the form of mescaline sulfate, the San Pedro cactus (also known as Wachuma) (*Trichocereus pachanoi*), and the peyote cactus (*Lophophora williamsii*). It is a criminal offense in the United States and many other countries, punishable by imprisonment and/or fines, to manufacture, possess, or supply opium (or opium derivatives from opium poppy plants or opium straw), mescaline in any form including mescaline sulfate, San Pedro (Wachuma), and peyote, except (i) in connection with government-sanctioned research, (ii) in the case of opium or opium derivatives by legally sanctioned prescription, or (iii) in the case of the peyote cactus, as permitted by the American Indian Religious Freedom Act Amendments. You should therefore understand that this book is intended to convey the author's experiences and to provide an understanding of the background and current state of research into these substances. It is not intended to encourage you to break the law and no attempt should be made to use these plants or substances for any purposes except in a legally sanctioned clinical trial or by legally sanctioned prescription or as permitted by the American Indian Religious Freedom Act Amendments. The author and the publisher expressly disclaim any liability, loss, or risk, personal or otherwise, that is incurred as a consequence, directly or indirectly, of the contents of this book.

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INTRODUCTION

Of all the many things humans rely on plants for—sustenance, beauty, medicine, fragrance, flavor, fiber—surely the most curious is our use of them to change consciousness: to stimulate or calm, to fiddle with or completely alter, the qualities of our mental experience. Like most people, I use a couple of plants this way on a daily basis. Every morning without fail I begin my day by preparing a hot-water infusion of one of two plants that I depend on (and dependent I am) to clear the mental fog, sharpen my focus, and prepare myself for the day ahead. We don't usually think of caffeine as a drug, or our daily use of it as an addiction, but that is only because coffee and tea are legal and our dependence on them is socially acceptable. So, then, what exactly is a drug? And why is making tea from the leaves of *Camellia sinensis* uncontroversial, while doing the same thing with the seed heads of *Papaver somniferum* is, as I discovered to my peril, a federal crime?

All who try to construct a sturdy definition of drugs eventually run aground. Is chicken soup a drug? What about sugar? Artificial sweeteners? Chamomile tea? How about a placebo? If we define a drug simply as a substance we ingest that changes us in some way, whether in body or in mind (or both), then all those substances surely qualify. But shouldn't we be able to distinguish foods from drugs? Faced with that very dilemma, the Food and Drug Administration punted, offering a circular definition of drugs as "articles other than food" that are recognized in the pharmacopoeia—that is, as drugs by the FDA. Not much help there.

Things become only slightly clearer when the modifier "illicit" is added: an illicit drug is whatever a government decides it is. It can be no accident that these are almost exclusively the ones with

the power to change consciousness. Or, perhaps I should say, with the power to change consciousness in ways that run counter to the smooth operations of society and the interests of the powers that be. As an example, coffee and tea, which have amply demonstrated their value to capitalism in many ways, not least by making us more efficient workers, are in no danger of prohibition, while psychedelics—which are no more toxic than caffeine and considerably less addictive—have been regarded, at least in the West since the mid-1960s, as a threat to social norms and institutions.

But even these classifications are not as fixed or as sturdy as you may think. At various times both in the Arab world and in Europe, authorities have outlawed coffee, because they regarded the people who gathered to drink it as politically threatening. As I write, psychedelics seem to be undergoing a change of identity. Since researchers have demonstrated that psilocybin can be useful in treating mental health, some psychedelics will probably soon become FDA-approved medicines: that is, recognized as more helpful than threatening to the functioning of society.

This happens to be precisely how Indigenous peoples have always regarded these substances. In many Indigenous communities, the ceremonial use of peyote, a psychedelic, *reinforces* social norms by bringing people together to help heal the traumas of colonialism and dispossession. The government recognizes the First Amendment right of Native Americans to ingest peyote as part of the free exercise of their religion, but under no circumstances do the rest of us enjoy that right, even if we use peyote in a similar way. So here is a case where it is the identity of the user rather than the drug that changes its legal status.

Nothing about drugs is straightforward. But it's not quite true that our plant taboos are entirely arbitrary. As these examples suggest, societies condone the mind-changing drugs that help uphold society's rule and ban the ones that are seen to undermine it. That's why in a society's choice of psychoactive substances we can read a great deal about both its fears and its desires.

Ever since I took up gardening as a teenager and attempted to grow cannabis, I have been fascinated by our attraction to these powerful plants as well as by the equally powerful taboos and fraught feelings with which we surround them. I've come to appreciate that when we take these plants into our bodies and let them change our minds, we are engaging with nature in one of the most profound ways possible.

There is scarcely a culture on earth that hasn't discovered in its environment at least one such plant or fungus, and in most cases a whole suite of them, that alters consciousness in one of a variety of ways. Through what was surely a long and perilous trial and error, humans have identified plants that lift the burden of physical pain; render us more alert or capable of uncommon feats; make us more sociable; elicit feelings of awe or ecstasy; nourish our imagination; transcend space and time; occasion dreams and visions and mystical experiences; and bring us into the presence of our ancestors or gods. Evidently, normal everyday consciousness is not enough for us humans; we seek to vary, intensify, and sometimes transcend it, and we have identified a whole collection of molecules in nature that allow us to do that.

This Is Your Mind on Plants is a personal inquiry into three of those molecules and the remarkable plants that produce them: the morphine in the opium poppy; the caffeine in coffee and tea; and the mescaline produced by the peyote and San Pedro cacti. The second of these molecules is legal everywhere today; the first is illegal in most places (unless it has been refined by a pharmaceutical company and prescribed by a physician); and the third is illegal in the United States unless you are a member of a Native American tribe. Each represents one of the three broad categories of psychoactive compounds: the downer (opium); the upper (caffeine); and what I think of as the outer (mescaline). Or, to put it a bit more scientifically, I profile here a sedative, a stimulant, and a hallucinogen.

Taken together, these three plant drugs cover much of the spectrum of the human experience of psychoactive substances, from the everyday use of caffeine, the most popular psychoactive drug on the planet; to the ceremonial use of mescaline by Indigenous peoples; to the age-old use of opiates to relieve pain. That particular chapter is set during the drug war, at a topsy-turvy moment when the government was paying more attention to a bunch of gardeners growing poppies in order to brew a mild narcotic tea than it was to a pharmaceutical company that was knowingly addicting millions of Americans to its FDA-approved opiate, OxyContin. I was one of those gardeners.

I tell each of these stories from multiple perspectives and through a variety of lenses: historical, anthropological, biochemical, botanical, and personal. In each case, I have some skin in the game—or perhaps I should say brain cells, since I don't know how to write about how it feels, and what it means, to change consciousness without conducting some self-experimentation. Though in the case of caffeine, self-experimentation meant abstaining from it rather than partaking, which proved much harder to do.

One of these chapters consists of an essay I wrote twenty-five years ago, when the drug war was raging, and it bears the scars of that period of fear and paranoia. But the other stories have been inflected by the fading of that war, the end of which now appears in sight. In the 2020 election, Oregonians voted to decriminalize the possession of *all* drugs and specifically to legalize therapy using psilocybin. A ballot measure passed in Washington, D.C., calls for the decriminalization* of "entheogenic plants and fungi." ("Entheogen," from the Greek for "manifesting the god [divine] within," is an alternative term for psychedelics, coined in 1979 by a group of religious scholars hoping to remove the counterculture taint from this class of drugs and underscore the spiritual use to which they have been put for thousands of years.) In the same election, New Jersey, along with four traditionally red states—Arizona, Mississippi, Montana, South Dakota—voted to liberalize

marijuana laws, bringing the number of states that have legalized some form of marijuana use to thirty-six.

My wager in writing *This Is Your Mind on Plants* is that the decline of the drug war, with its brutally simplistic narratives about "your brain on drugs," has opened a space in which we can tell some other, much more interesting stories about our ancient relationship with the mind-altering plants and fungi with which nature has blessed us.

I use the word "blessed" in full awareness of the human tragedies that can accompany the use of drugs. Much better than we do, the Greeks understood the two-faced nature of drugs, an understanding reflected in the ambiguity of their term for them: *pharmakon*. A pharmakon can be either a medicine or a poison; it all depends—on use, dose, intention, and set and setting.* (The word has a third meaning as well, one often relied on during the drug war: a pharmakon is also a scapegoat, something for a group to blame its problems on.) Drug abuse is certainly real, but it is less a matter of breaking the law than of falling into an unhealthy relationship with a substance, whether licit or illicit, one in which the ally, or medicine, has become an enemy. The same opiates that killed some fifty thousand Americans by overdose in 2019 also make surgery endurable and ease the passage out of this life. Surely that qualifies as a blessing.

The stories I tell here put this trio of psychoactive plant chemicals into the context of our larger relationship to nature. One of the innumerable threads connecting us to the natural world is the one that links plant chemistries to human consciousness. And since this *is* a relationship, we need to account for the plants' points of view as well as our own. How amazing is it that so many kinds of plants have hit upon the precise recipes for molecules that fit snugly into receptors in human brains? And that by doing so these molecules can short-circuit our experience of pain, or rouse us, or obliterate the sense of being a separate self? You have to

wonder: what's in it for the plants to devise and manufacture molecules that can pass for human neurotransmitters and affect us in such profound ways?

Most of the molecules that plants produce that change animal minds start out as tools for defense: alkaloids like morphine, caffeine, and mescaline are bitter-tasting toxins meant to discourage animals from eating the plants that make them and, should the animals persist, to poison them. But plants are clever, and over the course of evolution they've learned that simply killing a pest outright is not necessarily the smartest strategy. Since a lethal pesticide would quickly select for resistant members of the pest population, rendering it ineffective, plants have evolved subtler and more devious strategies: chemicals that instead mess with the minds of animals, confusing or disorienting them or ruining their appetite—something that caffeine, mescaline, and morphine all reliably do.

But while most of the psychoactive molecules plants have developed started out as poisons, they sometimes evolved into the opposite: attractants. Scientists recently discovered a handful of species that produce caffeine in their nectar, which is the last place you would expect a plant to serve up a poisonous beverage. These plants have discovered that they can attract pollinators by offering them a small shot of caffeine; even better, that caffeine has been shown to sharpen the memories of bees, making them more faithful, efficient, and hardworking pollinators. Pretty much what caffeine does for us.

Once humans discovered what caffeine and morphine and mescaline could do for them, the plants that produce the greatest amounts of these chemicals were the ones that prospered in the sunshine of our attention; we disseminated their genes around the world, vastly expanding their habitat and providing for their every need. By now our fates and the fates of these plants are complexly intertwined. What began as war has evolved into marriage.

Why do we humans go to such lengths to change our minds, and then why do we fence that universal desire with laws and customs, taboos and anxieties? These questions have occupied me since I began writing about our engagement with the natural world more than thirty years ago. When you compare this desire to the other needs we turn to nature to gratify—for food, clothing, shelter, beauty, and so on—the drive to alter consciousness wouldn't seem to contribute nearly as much, if anything, to our success or survival. In fact, the desire to change consciousness may be seen as maladaptive, since altered states can put us at risk for accidents or make us more vulnerable to attack. Also, many of these plant chemicals are toxic; others, like morphine, are highly addictive.

But if our species' desire to change consciousness is universal, a human given, then doing so should offer benefits to make up for the risks, or natural selection would long ago have weeded out the drug takers. Take, for example, morphine's value as a painkiller, which has made it one of the most important drugs in the pharmacopoeia going back thousands of years.

Plants that change consciousness answer to other human needs as well. We shouldn't underestimate the value, to people trapped in monotonous lives, of a substance that can relieve boredom and entertain by sponsoring novel sensations and thoughts in the mind. Some drugs can expand the contours of a world constrained by circumstance, as I discovered during the pandemic. Drugs that enhance sociability not only gratify us but presumably result in more offspring. Stimulants like caffeine improve concentration, making us better able to learn and work, and to think in rational, linear ways. Human consciousness is always at risk of getting stuck, sending the mind around and around in loops of rumination; mushroom chemicals like psilocybin can nudge us out of those grooves, loosening stuck brains and making possible fresh patterns of thought.

Psychedelic drugs can also benefit us—and occasionally our culture—by stimulating the imagination and nourishing creativity in the individuals who take them. This is not to suggest that all the

ideas that occur to the altered mind are any good; most of them aren't. But every now and then a tripping brain will hit upon a novel idea, a solution to a problem, or a new way of looking at things that will benefit the group and, possibly, change the course of history. The case can be made that the introduction of caffeine to Europe in the seventeenth century fostered a new, more rational (and sober) way of thinking that helped give rise to the age of reason and the Enlightenment.

It's useful to think of these psychoactive molecules as mutagens, but mutagens operating in the realm of human culture rather than in biology. In the same way that exposure to a disruptive force like radiation can mutate genes, introducing variation and throwing off new traits that every so often prove adaptive for the species, psychoactive drugs, operating on the minds of individuals, occasionally contribute useful new memes to the evolution of culture—conceptual breakthroughs, fresh metaphors, novel theories. Not always, not even often, but every now and then, the encounter of a mind and a plant molecule changes things. If the human imagination has a natural history, as it must, can there be any doubt that plant chemistries have helped to inform it?

Psychedelic compounds can promote experiences of awe and mystical connection that nurture the spiritual impulse of human beings—indeed, that might have given rise to it in the first place, according to some religious scholars.* The notion of a beyond, of a hidden dimension of reality, or of an afterlife—these, too, may be memes introduced to human culture by visions that psychoactive molecules inspired in human minds. Drugs are not the only way to occasion the sort of mystical experience at the core of many religious traditions—meditation, fasting, and solitude can achieve similar results—but they are a proven tool for making it happen. The spiritual or ceremonial use of plant drugs can also help knit people together, fostering a stronger sense of social connection accompanied by a diminished sense of self. We have only just begun to understand how the human involvement with psychoactive plants has shaped our history.

It probably shouldn't surprise us that plants of such power and possibility are surrounded by equally powerful emotions, laws, rituals, and taboos. These reflect the understanding that changing minds can be disruptive to both individuals and societies, and that when such powerful tools are placed in the hands of fallible human beings, things can go very wrong. We have much to learn from traditional Indigenous cultures that have made long use of psychedelics like mescaline or ayahuasca: as a rule, the substances are never used casually, but always with intention, surrounded by ritual and under the watchful eye of experienced elders. These people recognize that these plants can unleash Dionysian energies that can get out of control if not managed with care.

But the blunt instrument of a drug war has kept us from reckoning with these ambiguities and the important questions about our nature that they raise. The drug war's simplistic account of what drugs do and are, as well as its insistence on lumping them all together under a single meaningless rubric, has for too long prevented us from thinking clearly about the meaning and potential of these very different substances. The legal status of this or that molecule is one of the least interesting things about it. Much like a food, a psychoactive drug is not a thing—without a human brain, it is inert—so much as it is a relationship; it takes both a molecule and a mind to make anything happen. The premise of this book is that these three relationships hold up mirrors to our deepest human needs and aspirations, the operations of our minds, and our entanglement with the natural world.

OPIUM

Prologue

The narrative that follows this prologue is something of a period piece, a dispatch from the war on drugs near its peak, circa 1996–97, that itself became a minor casualty of that war. The piece originally appeared in the April 1997 issue of *Harper's Magazine*, but not in its entirety. After consulting with several lawyers, I concluded there were four or five crucial pages of the narrative that I couldn't publish without risking arrest as well as the forfeiture of our house and garden—the wrecking of our life, basically. Twenty-four years later, those pages—which had gone missing after I hid them away—have been restored and appear here in print for the first time.

The story began as something of a lark and ended in anxiety, paranoia, and self-censorship. At the time, my wife and I and our four-year-old son were living in rural Connecticut, and I was writing personal essays about the goings-on in my garden. As a gardener, I'd become fascinated by the symbiotic relationship our species has struck up with certain plants, using them to gratify our desires for everything from nourishment to beauty to a change of consciousness. Early in 1996, my editor at *Harper's Magazine*, Paul Tough, sent me an underground-press book called *Opium for the Masses* that had crossed his desk, suggesting there might be a column in it for me. I was immediately intrigued by the idea that I could grow opium and produce this most ancient of psychoactive drugs in my garden from easily obtainable seeds. I decided to give it a try, just to see what would happen. What happened turned out to be a living nightmare, as I found myself ensnared in a quiet but determined federal campaign to stamp out knowledge of an easy-to-produce homegrown narcotic before it became a fad.

Read today, in what we can hope are the waning days of the drug war, the piece feels overwrought in places, but it's important to understand the context in which it was written. Under

President Clinton, the government was prosecuting the drug war with a vehemence never before seen in America. The year I planted my poppies, more than a million Americans were arrested for drug crimes. The penalties for many of those crimes had become draconian under Clinton's 1994 crime bill, which introduced new "three-strikes" sentencing provisions and led to mandatory minimum sentences for many nonviolent drug offenses. By the mid-1990s, a series of Supreme Court decisions in drug cases had handed the government a raft of new powers that have significantly eroded our civil liberties. The government also won new powers to confiscate property—houses, cars, land—involved in drug crimes, even when no individual has been convicted, or even charged.

Were these erosions of our liberties a casualty of the drug war or its objective? It's a fair question. President Clinton didn't start the drug war—that distinction belongs to Richard Nixon, who we now know viewed drug enforcement not as a matter of public health or safety but as a political tool to wield against his enemies. In an April 2016 article in *Harper's Magazine*, "Legalize It All," Dan Baum recounted an interview that he conducted with John Ehrlichman in 1994—two years before my misadventures in the garden. Ehrlichman, you will recall, was President Nixon's domestic policy adviser; he served time in federal prison for his role in Watergate. Baum came to talk to Ehrlichman about the drug war, of which he was a key architect.

"You want to know what this was really all about?" Ehrlichman began, startling the journalist with both his candor and his cynicism. Ehrlichman explained that the Nixon White House "had two enemies: the antiwar left and black people. . . . We knew we couldn't make it illegal to be either against the war or black, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders, raid their homes, break up their meetings, and vilify them night after night on the evening news. Did we know we were lying about the drugs? Of course we did."*

Although neither victory nor defeat was ever declared in the war on drugs, you seldom hear the phrase on the lips of government officials and politicians anymore. I suspect there are two reasons for their silence: As a matter of politics, the government has less need of draconian drug laws since declaring a new "war" in 2001. The war on terror has taken over from the war on drugs as a justification for expanding government power and curbing civil liberties. And as a matter of public health, it has become obvious to anyone paying attention that, after a half century of waging war on drugs, it is the drugs that are winning. Criminalizing drugs has done little to discourage their use or to lower rates of addiction and death from overdose. The drug war's principal legacy has been to fill our prisons with hundreds of thousands of nonviolent criminals—a great many more of them Black people than hippies. This, then, is the first historical context in which my account of growing opium in 1996 should be read, as a window on a dark and fearful time in America, when you didn't have to leave your garden to become a criminal and put yourself in serious legal jeopardy. But there is another historical context in which the piece can be read, and this one nobody was aware of at the time.

The words "opium" and "opiate" carry a very different set of connotations today than they did when I planted my poppies in 1996. Now the words conjure a national public health catastrophe, but in 1996 there was no "opioid crisis" in America. What there was were maybe half a million heroin addicts, and about forty-seven hundred deaths from drug overdoses each year. At the time, these tragedies were often cited to justify the war on drugs, but in a country of 270 million this hardly qualified as a public health crisis. (Which is the reason cannabis had to be added to the war's list of targets.) Today, by comparison, deaths from overdose of opiates, both licit and illicit, approach fifty thousand a year, and an estimated 2 million Americans are addicted to opiates of one kind or another. (Another 10 million abuse opiates, according to the Substance Abuse and Mental Health Services Administration.)

After the coronavirus, the opiate epidemic represents the biggest threat to public health since the AIDS/HIV epidemic.

The chief culprit in the opiate epidemic is not a virus, however, or even the illicit drug economy; it's a corporation. What I didn't know when I was conducting my illegal experiments with opium is that, at the very same historical moment, the pharmaceutical industry was planting the first seeds of the opioid crisis. The same summer that the Drug Enforcement Agency (DEA) was quietly cracking down on gardeners, seed merchants, writers, and other small-timers messing around with opium poppies, a little-known pharmaceutical company called Purdue Pharma—headquartered in Stamford, Connecticut, sixty miles down Route 7 from my garden—had begun marketing a new, slow-release opiate called OxyContin.

Launched in 1996, Purdue's aggressive marketing campaign for OxyContin convinced doctors that the company's new formulation was safer and less addictive than other opiates. The company assured the medical community that pain was being undertreated, and that the new opiate could benefit not just cancer and surgery patients but people suffering from arthritis, back pain, and workplace injuries. The campaign produced an explosion in prescriptions for OxyContin that would earn the company's owners, the Sackler family,* more than $35 billion, while leading to more than 230,000 deaths by overdose. But that figure grossly understates the number of casualties from OxyContin: thousands of people who became addicted to legal painkillers eventually turned to the underground when they could no longer obtain or afford prescription opiates; four out of five new heroin users used prescription painkillers first.

At the same time a war against illicit drugs was raging, ostensibly to stamp out a real but fairly modest public health problem, a legal, FDA-approved opiate was being pushed on people, creating what became a genuine public health crisis. Read in this light, the drug war machinations looming over my garden and story seem almost comic, in a Keystone Kops sort of way. *They went thataway.*

Humans have been cultivating opium poppies for more than five thousand years, as one of the most important medicines in the pharmacopoeia. For most of that time we have recognized the two-faced nature of the flower and the powerful molecules it gives us: that it is at once a blessing—to those in pain or on the verge of death—and a grave peril to any who would abuse it. To both the Greeks and Romans, the poppy flower symbolized both the sweetness of sleep and the prospect of death. We're evidently not as good as they were at holding two contradictory ideas in our heads, for today who has a good word to say about opiates or opium? "Blessing" no longer comes to mind, except perhaps at the deathbed. But what is true of the opium poppy is true for all the medicines that plants have given us: they are both allies and poisons at once, which means it's up to us to devise a healthy relationship with them.

As for the poppy flower itself, it may soon disappear from our age-old relationship to the opiates, as much stronger and cheaper synthetic versions of the flower's alkaloids come to dominate both the legal and illicit markets for painkillers. Something will be lost when that happens. One of the wagers of my experiment in the garden is that there might be some value in getting to know the opium poppy in all its aspects and power, before its role in our lives, once so important, is downgraded to ornament.

Opium, Made Easy

Last season was a strange one in my garden, notable not only for the unseasonably cool and wet weather—the talk of gardeners all over New England—but also for its climate of paranoia. One flower was the cause: a tall, breathtaking poppy, with silky scarlet petals and a black heart, the growing of which, I discovered rather too late, is a felony under state and federal law. Actually, it's not quite as simple as that. My poppies were, or became, felonious; another gardener's might or might not be. The legality of growing opium poppies (whose seeds are sold under many names, including the breadseed poppy, *Papaver paeoniflorum*, and, most significantly, *Papaver somniferum*) is a tangled issue, turning

on questions of nomenclature and epistemology that it took me the better part of the summer to sort out. But before I try to explain, let me offer a friendly warning to any gardeners who might wish to continue growing this spectacular annual: the less you know about it, the better off you are, in legal if not horticultural terms. Because whether or not the opium poppies in your garden are illicit depends not on what you do, or even intend to do, with them but very simply on what you *know* about them. Hence my warning: if you have any desire to grow opium poppies, you would be wise to stop reading right now.

As for me, I'm afraid that, at least in the eyes of the law, I'm already lost, having now tasted of the forbidden fruit of poppy knowledge. Indeed, the more I learned about poppies, the guiltier my poppies became—and the more fearful grew my days and to some extent also my nights. Until the day last fall, that is, when I finally pulled out my poppies' withered stalks and, with a tremendous feeling of relief, threw them on the compost, thereby (I hope) rejoining the ranks of gardeners who don't worry about visits from the police.

It started out if not quite innocently, then legally enough. Or at least that's what I thought back in February, when I added a couple of poppy varieties (*P. somniferum* as well as *P. paeoniflorum* and *P. rhoeas*) to my annual order of flowers and vegetables from the seed catalogs. But the state of popular (and even expert) knowledge about poppies is confused, to say the least; mis- and even disinformation is rife. I'd read in *Martha Stewart Living* that "contrary to general belief, there is no federal law against growing *P. somniferum*." Before planting, I consulted my *Taylor's Guide to Annuals*, a generally reliable reference that did allude to the fact that "the juice of the unripe pod yields opium, the production of which is illegal in the United States." But *Taylor's* said nothing worrisome about the plants themselves. I figured that if the seeds could be sold legally (and I found *somniferum* on offer in a half-dozen well-known catalogs, though it was not always sold under that name), how could the obvious next step—i.e., planting the seeds according to the directions on the packet—possibly be a federal offense? Were this the case, you would think there'd at least be a disclaimer in the catalogs.

So it seemed to me that I could remain safely on the sunny side of the law just as long as I didn't attempt to extract any opium from my poppies. Yet I have to confess that this was a temptation I grappled with all last summer. You see, I'd become curious as to whether it was in fact possible, as I'd recently read, for a gardener of average skills to obtain a

narcotic from a plant grown in this country from legally available seeds. To another gardener this will not seem odd, for we gardeners are like that: eager to try the improbable, to see if we can't successfully grow an artichoke in Zone 5 or make echinacea tea from the roots of our purple coneflowers. Deep down I suspect that many gardeners regard themselves as minor-league alchemists, transforming the dross of compost (and water and sunlight) into substances of rare value and beauty and power. Also, one of the greatest satisfactions of gardening is the independence it can confer—from the greengrocer, the florist, the pharmacist, and, for some, the drug dealer. One does not have to go all the way "back to the land" to experience the satisfaction of providing for yourself off the grid of the national economy. So, yes, I was curious to know if I could make opium at home, especially if I could do so without making a single illicit purchase. It seemed to me that this would indeed represent a particularly impressive sort of alchemy.

I wasn't at all sure, however, whether I was prepared to go quite that far. I mean, *opium!* I'm not eighteen anymore, or in any position to undertake such a serious risk. I am in fact forty-two, a family man (as they say) and homeowner whose drug-taking days are behind him.* Not that they aren't sometimes fondly recalled, the prevailing cant about drug abuse notwithstanding. But now I have a kid and a mortgage and a Keogh. There is simply no place in my grown-up, middle-class lifestyle for an arrest on federal narcotics charges, much less for the forfeiture of my family's house and land, which often accompanies such an arrest. It was one thing, I reasoned, to grow poppies; quite another to manufacture narcotics from them. I figured I knew where the line between these two deeds fell, and felt confident that I could safely toe it.

But in these days of the American drug war, as it turns out, the border between the sunny country of the law-abiding—my country!—and a shadowy realm of SWAT teams, mandatory minimum sentences, asset forfeitures, and ruined lives is not necessarily where one thinks it is. One may even cross it unawares. As I delved into the horticulture and jurisprudence of the opium poppy last summer, I made the acquaintance of one man, a contemporary and a fellow journalist, who had had his life pretty well wrecked after stepping across that very border. In his case, though, there is reason to believe it was the border that did the moving; he was arrested on charges of possessing the same flowers that countless thousands of Americans are right now growing in their gardens and keeping in vases in their living rooms. What appears to have set him apart was the fact that he had published

a book about this flower in which he described a simple method for converting its seedpod into a narcotic—knowledge that the government has shown it will go to great lengths to keep quiet. Just where this leaves me, and this article, is, well, the subject of this article.

1.

Before recounting my own adventures among the poppies, and encounters with the poppy police, I need to tell you a little about this acquaintance, since he was the inspiration for my own experiments in poppy cultivation as well as the direct cause of the first flush of my paranoia. His name is Jim Hogshire. He first came to my attention a few years ago, when this magazine published an excerpt from *Pills-a-go-go*, one of the wittier and more informative of the countless "zines" that sprang up in the early '90s, when desktop publishing first made it possible for individuals single-handedly to publish even the narrowest of special-interest periodicals. Hogshire's own special interest—his passion, really—was the world of pharmaceuticals: the chemistry, regulation, and effects of licit and illicit drugs. Published on multicolored stock more or less whenever Hogshire got around to it, *Pills-a-go-go* printed inside news about the pharmaceutical industry alongside firsthand accounts of Hogshire's own self-administered drug experiments—"pill-hacking," he called it. The zine had a strong libertarian-populist bent, and was given to attacking the FDA, DEA, and AMA with gusto whenever those institutions stood between the American people and their pills—pills that Hogshire regarded with a reverence born of their astounding powers to heal as well as to alter the course of human history and, not incidentally, consciousness.

Hogshire's reports on his drug experiments made for amusing reading. I particularly remember his description, reprinted in this magazine, of the effects of a deliberate overdose of Dextromethorphan Hydrobromide, or DM, a common ingredient in over-the-counter cough syrups and nighttime cold remedies. After drinking eight ounces of Robitussin DM, Hogshire reported waking up at 4:00 a.m. and determining that he should now shave and go to Kinko's to get some copies made.

> That may seem normal, but the fact was that *I had a reptilian brain*. My whole way of thinking and perceiving had

changed. . . .

I got in the shower and shaved. While I was shaving I "thought" that for all I knew I was hacking my face to pieces. Since I didn't see any blood or feel any pain I didn't worry about it. Had I looked down and seen that I had grown another limb, I wouldn't have been surprised at all; I would have just used it. . . .

The world became a binary place of dark and light, on and off, safety and danger. . . . I sat at my desk and tried to write down how this felt so I could look at it later. I wrote down the word "Cro-Magnon." I was very aware that I was stupid. . . . Luckily there were only a couple of people in Kinko's and one of them was a friend. She confirmed that my pupils were of different sizes. One was out of round . . .

I knew there was no way I could know if I was correctly adhering to social customs. I didn't even know how to modulate my voice. Was I talking too loud? Did I look like a regular person? I understood that I was involved in a big contraption called civilization and that certain things were expected of me, but I could not comprehend what the hell those things might be. . . .

I found being a reptile kind of pleasant. I was content to sit there and monitor my surroundings. I was alert but not anxious. Every now and then I would do a "reality check" to make sure I wasn't masturbating or strangling someone, because of my vague awareness that more was expected of me than just being a reptile. . . .

My interest in Hogshire's drug journalism was mild and strictly literary; as I've mentioned, my own experiments with drugs were past, and never terribly ambitious to begin with. I'd been too terrified ever to try hallucinogens, and my sole experience with opiates had accompanied some unpleasant dental work. I'd grown some marijuana once in the early '80s, when doing so was no big deal, legally speaking. But things are different now: growing a handful of marijuana plants today could cost me my freedom and my house.

We may not hear as much now about the war on drugs as we did in the days of Nancy Reagan, William Bennett, and "Just Say No." But in fact the drug war continues unabated; if anything, the Clinton administration is waging it even more intensely than its predecessors,

quickly followed by the phrase “dark connotations of the opium poppy.” But nowhere in my reading did I find a clear statement that planting *Papaver somniferum* would put a gardener on the wrong side of the law. “When grown in a garden,” one authority on annuals declared, somewhat ambiguously, “the cultivation of *P. somniferum* is a case of *Honi soit qui mal y pense*. (Shame to him who thinks ill.)” In general the garden writers tended to ignore or gloss over the legal issue and focus instead on the beauty of *somniferum*, which all concurred was exquisite.

Reading about poppies that winter, I wondered if it was possible to untangle the flower’s physical beauty from the knowledge of its narcotic properties. It seemed to me that even the lady garden writers who (presumably) would never think of sampling opium had been subconsciously influenced by its mood-altering potential; Louise Beebe Wilder tells us that poppies set her “heart vibrating with their waywardness.” Merely to gaze at a poppy was to feel dreamy, to judge by the many American Impressionist paintings of the flower, or from the experience of Dorothy and company, who you’ll recall were interrupted on their journey through Oz when they passed out in a field of scarlet poppies. If ever there was an innocent angle from which to gaze at the opium poppy, our culture seems long ago to have forgotten where it is.

By now I too was falling under the spell of the opium poppy. I dug out my college edition of De Quincey’s *Confessions of an English Opium-Eater*, and I reread Coleridge’s descriptions of his opium dreams (“. . . how divine that repose is, what a spot of enchantment, a green spot of fountains and flowers and trees in the very heart of a waste of sands”). I read accounts of the Opium Wars, in which England went to war for no loftier purpose than to keep China’s harbors open to opium clipper ships bound from India, whose colonial economy depended on opium exports. I read about nineteenth-century medicine, in whose arsenal opium—usually in the form of a tincture called laudanum—was easily the most important weapon. In part this was because the principal goal of medical care at that time was not so much to cure illness as to relieve pain, and there was (and is) no better painkiller than opium and its derivatives. But opium-based preparations were also used to treat, or prevent, a great variety of ills, including dysentery, malaria, tuberculosis, cough, insomnia, anxiety, and even colic in infants. (Since opium is extremely bitter, nursing mothers would induce babies to ingest it by smearing the medicine on their nipples.) Regarded as “God’s own medicine,” preparations of opium were as common in the Victorian medicine cabinet as aspirin is in ours.

Is there another flower that has had anywhere near the opium poppy's impact on history and literature? In the nineteenth century, especially, the poppy played as crucial a role in the course of events as petroleum has played in our own century: opium was the basis of national economies, a staple of medicine, an essential item of trade, a spur to the Romantic revolution in poetry, even a *casus belli*.

Yet I had to canvass dozens of friends before I found one who'd actually tried it; opium in its smokable form is apparently all but impossible to obtain today, no doubt because smuggling heroin is so much easier and more lucrative. (One unintended consequence of the war on drugs has been to increase the potency of all illicit drugs: garden-variety marijuana has given way to powerful new strains of sinsemilla; and powdered cocaine, to crack.) The friend who had once smoked opium smiled wistfully as he recalled the long-ago afternoon: "The dreams! The dreams!" was all he would say. When I pressed him for a more detailed account, he referred me to Robert Bulwer-Lytton, the Victorian poet, who'd likened the effect to having one's soul rubbed down with silk.

There was no question that I would have to try to grow it, if only as a historical curiosity. Okay, not *only* that, but that too. Again, you have to understand the gardener's mentality. I once grew Jenny Lind melons, a popular nineteenth-century variety named for the most famous soprano of the time, just to see if I *could* grow them, but also to glean some idea of what the word "melon" might have conjured in the mind of Walt Whitman or Chester Arthur. I planted an heirloom apple tree, "Esopus Spitzenberg," simply because Thomas Jefferson had planted it at Monticello, declaring it the "finest eating apple in the world." Gardening is, among other things, an exercise of the historical imagination, and I was by now eager to stare into the black heart of an opium poppy with my own eyes.

So I began studying the flower sections of the seed catalogs, which by February formed a foot-high pile on my desk. I found "breadseed poppies" (whose seeds are used in baking) for sale in Seeds Blüm, a catalog of heirloom plants from Idaho, and several double varieties (that is, flowers with multiple petals) described as *Papaver paeoniflorum* in the catalog of Thompson & Morgan, the British seed merchants. Burpee carries a breadseed poppy called "Peony Flowered," whose blooms resemble "ruffled pom-poms." In Park's, a large, mid-market seed catalog from South Carolina (their covers invariably feature scrubbed American children arranged in a sea of flowers and vegetables), I found

a white double poppy called “White Cloud” and identified as “*Papaver somniferum paeoniflorum*.” Although I didn’t know it at the time, all these poppies turn out to be strains of *Papaver somniferum*.

In Cook’s, the catalog from which I usually order my seeds for salad greens and exotic vegetables, I found *paeoniflorum* and *rhoeas*, as well as two intriguing varieties of *somniferum*: “Single Danish Flag,” a tall poppy that, judging from the catalog copy, closely resembles the classic scarlet poppies I’d read about and seen in Impressionist paintings; and “Hens and Chicks,” about which the catalog was particularly enthusiastic: “the large lavender blooms are a wonderful prelude to the seed pods, which are striking in a dried arrangement. A large central pod (the hen) is surrounded by dozens of tiny pods (the chicks).” More to the point, Hogshire had indicated in *Opium for the Masses* that “Hens and Chicks” might prove especially potent.

This was an issue I had wondered about: the ornamental varieties on sale in the catalogs had obviously been bred for their visual or, in the case of the breadseed poppies, culinary qualities. It seemed likely that, as breeders concentrated on these traits to the neglect of others, the morphine and codeine content of these poppies might have dwindled to nothing. So what were the best varieties to plant for opiates?

I couldn’t very well pose this question to my usual sources in the gardening world—to Dora Galitzki, the horticulturist who answers the help line at the New York Botanical Garden, or to Shepherd Ogden, the knowledgeable and helpful proprietor of Cook’s. So I tried, through a mutual friend, to get in touch with Jim Hogshire himself. I emailed him, explaining what I was up to and asking for recommendations as to the best poppy varieties as well as for advice on cultivation. As I would do with any fellow flower enthusiast, I asked him if he had any seeds he might be willing to share with me and told him about the varieties I’d found in the catalogs. “How can I be confident that these seeds—which have obviously been bred and selected for their ornamental qualities—will ‘work’?”

As it turned out, I picked the wrong time to ask. One morning a few days later, and before I’d had any response to my email, I got a call from our mutual friend saying that Hogshire had been arrested in Seattle and was being held in the city jail on felony drug charges. It seems that on March 6 a Seattle Police Department SWAT team had burst into Hogshire’s apartment, armed with a search warrant claiming that he was running a “drug lab.” Hogshire and his wife, Heidi, were held in handcuffs while the police conducted a six-hour search that yielded a jar

of prescription pills, a few firearms, and several bunches of dried poppies wrapped in cellophane. The poppies had evidently come from a florist, but Hogshire was nevertheless charged with "possession of opium poppy, with intent to manufacture and distribute." The guns were legal, but one was cited in the indictment as an "enhancement": another product of the drug war is the fact that the penalties on some narcotics charges rise steeply when the crime "involves" a firearm, even when that firearm is legal or registered. Neither Jim nor Heidi Hogshire had ever been arrested before. Now Jim was being held on $10,000 bail; Heidi, on $2,000. If convicted, Jim faced ten years in prison; Heidi faced a two-year sentence on a lesser charge.

Forgive me for the sudden upwelling of naked self-interest, but all I could think about was that email of mine, buried somewhere on the hard drive of Hogshire's computer, which no doubt was already in the hands of the police forensics unit. Or maybe the message had been intercepted somehow, part of a DEA tap on Hogshire's phone or a surveillance of his email account. I could hardly believe my stupidity! Suddenly I thought I could feel the dull tug of the underworld's undertow, felt as if I'd been somehow *implicated* in something, though exactly what that might be I couldn't say. Yet my confidence that I stood firmly on the sunny side of the law had been shaken. They had my name.

But this was crazy, paranoid thinking, wasn't it? After all, I hadn't *done* anything, except order some flower seeds and write a mildly suggestive piece of email. As for Hogshire, surely there had to be more to this bust than a bunch of dried poppies; it didn't make any sense. I asked our mutual friend if he would be in touch with Hogshire anytime soon, because I was eager to talk to him, to learn more about his peculiar case.

"Also," I added, as casually as I could manage, "would you mind asking him whether he's gotten any email from me?"

2.

My poppy seeds arrived a couple of weeks later. My plan was to sow them, see if I could get flowers and pods, and decide only then whether to proceed any further. I'd been spooked by Hogshire's arrest, doubly spooked to learn from our friend that in fact he had never received my email—undelivered email being highly unusual in my experience. But I still had little reason to doubt that growing poppies for ornamental purposes was legal, and so on an unseasonably warm afternoon in the

first week of April I planted my seeds—two packets, each containing a thimbleful of grayish-blue specks. They looked exactly like what they were: poppy seeds, the same ones you find on a kaiser roll or a bagel. (In fact, it is possible to germinate poppy seeds bought from the supermarket's spice aisle. Also, eating such seeds prior to taking a drug test can produce a positive result.)

I'd prepared a tiny section of my garden, an area where the soil is especially loamy and, somewhat more to the point, several old apple trees block the view from the road. *Papaver somniferum* is a hardy annual that grows best in cool conditions, so it isn't necessary to wait for the last frost date to sow; I read that in the South, in fact, gardeners sow their poppies in late fall and winter them over. Sowing is a simple matter of broadcasting, or tossing, the seeds over the surface of the cultivated soil and watering them in; since the seeds are so tiny, there's no need to cover them, but it is a good idea to mix the seeds with a handful of sand in order to spread them as evenly as possible over the planting area.

Within ten days my soil had sprouted a soft grass of slender green blades half an inch high. These were soon followed by the poppies' first set of true leaves, which are succulent and spiky, not unlike those of a loose-leaf lettuce. The color is a pale, vegetal, blue-tinged green, and the foliage is slightly dusted-looking; "glaucous" is the horticultural term for it.

The poppies came up in thick clumps that would clearly need thinning. The problem was, how *much* thinning, and when? Hogshire's book was vague on this point, suggesting a spacing of anywhere from six inches to two feet between plants. My "straight" gardening books advised six to eight inches, but I realized that their recommendations assumed that the gardener's chief interest was flowers. I, of course, was less interested in floriferousness than in, um, big juicy pods. Eventually I called one of the seed companies that sell poppies and delicately asked about optimal spacing, "assuming for the sake of argument someone wanted to maximize the size and quality of his poppy heads." I don't think I aroused any suspicion from the person I talked to, who advised a minimum of eight inches between plants.

Around the time I first thinned my poppies, late in May, a friend who knew of my new horticultural passion sent me a newspaper clipping that briefly stopped me in my tracks. It was a gardening column by C. Z. Guest in the *New York Post* that carried the headline JUST SAY NO TO POPPIES. Guest wrote that although opium poppy seeds are legal to possess and sell, "the live plants (or even dried, dead ones) fall into the

everything he told me I subsequently found confirmed in the court records.

According to documents filed by the prosecutor's office, it was indeed an informant's letter that led to the March 6 raid on the Hogshires' apartment; the letter, sent to the Seattle police by a man named Bob Black, was cited along with Hogshire's published writings as "probable cause" in the search warrant. Bob Black is the disgruntled houseguest, the black hat in Hogshire's bizarre tale. A fellow Loompanics author (*The Abolition of Work and Other Essays*), Black is a self-described anarchist whom the Hogshires met for the first time when he arrived to spend the night on February 10; Loompanics owner Mike Hoy had asked the Hogshires if, as a personal favor, they'd be willing to put Black up in their apartment while he was in Seattle on assignment.

The evening went very badly. Accounts differ on the particulars, as well as on the chemical catalysts involved, but an argument about religion (Hogshire is a Muslim) somehow degenerated into a scuffle in which Black grabbed Heidi Hogshire around the throat and Jim threatened his guest with a loaded M-1 rifle. Ten days later, Black wrote to the Seattle police narcotics unit "to inform you of a drug laboratory . . . in the apartment of Jim Hogshire and Heidi Faust Hogshire." The letter, a denunciation worthy of a sansculotte, deserves to be quoted at length.

> The Hogshires are addicted to opium, which they consume as a tea and by smoking. In a few hours on February 10/11 I saw Jim Hogshire drink several quarts of the tea, and his wife smaller amounts. He also took Dexedrine and Ritalin several times. They have a vacuum pump and other drug-manufacturing tech. Hogshire told me he was working out a way to manufacture heroin from Sudafed.
>
> Hogshire is the author of the book Opium for the Masses which explains how to grow opium and how to produce it from the fresh plant or from seeds obtainable from artist-supply stores. His own consumption is so huge that he must be growing it somewhere. I enclose a copy of parts of his book. He also publishes a magazine Pills a Go Go under an alias promoting the fraudulent acquisition and recreational consumption of controlled drugs.
>
> Should you ever pay the Hogshires a visit, you should know that they keep an M-1 rifle leaning against the wall

near the computer.

Largely on the strength of this letter, the police were able to get a magistrate to sign a search warrant and raid the Hogshires' apartment. It was a quarter to seven in the evening, and Jim Hogshire was reading a book in his living room when he heard the knock at the door; the instant he answered it he found himself thrown up against a wall. Heidi, who was at the grocery store at the time, arrived home to find her husband in handcuffs and a SWAT team, outfitted in black ninja suits, ransacking her apartment. The SWAT team was so large—twenty officers, by Jim's estimate—that only a few could fit into the one-bedroom apartment at a time; the rest lined up in the hall outside.

"Do you publish this?" Jim recalls one officer demanding to know, as he waved a copy of *Pills-a-go-go* in his face. And then, "Where's your poppy patch?" Jim pointed out that it was wintertime and asked the officer, "Why should I grow poppies when they're on sale in the stores?"

"You're lying."

This particular SWAT team specialized in raiding drug labs, which may have been what they expected to find in the Hogshires' apartment. They had to settle, however, for dried poppies: a sealed cardboard box containing ten bunches wrapped in cellophane. The police refused to believe that Hogshire had bought them from a store. The police also found the vacuum pump Black had mentioned (though they didn't bother to seize it), the jar of pills, two rifles and three pistols (all legal), a thermite flare that Hogshire had bought at a gun show, a box of test tubes, and several copies of *Opium for the Masses*.

The Hogshires spent three harrowing days in jail before learning of the charges filed against them. Heidi was charged with possession of a Schedule II controlled substance: the opium poppies. Jim was charged with "possession of opium poppy, with intent to manufacture or distribute," an offense that, with the firearms enhancement, carries a ten-year sentence.

At a preliminary hearing in April, Jim Hogshire was fortunate enough to come before a judge who raised a skeptical eyebrow at the charges filed against him. The hearing had its comic moments. In support of the government's assertion that Hogshire had intent to distribute, the prosecutor, apparently unfamiliar with the literary reference, cited the title of his book: "It's not called 'Opium for Me,' 'Opium for My Friends,' or 'Opium for Anyone I Know.' It's called 'Opium for the Masses.' Which indicates that it's opium for a lot of people."

The judge, a man who evidently knew a thing or two about gardening, found the language in the indictment particularly dubious: the state had accused Hogshire not of manufacturing opium but of manufacturing opium poppies. “How do you manufacture an opium poppy?” the judge asked, and then answered his own question: “You propagate them—it’s the only way.” By “propagate” the judge meant planting and growing, yet, as he pointed out, the state had presented no evidence that Hogshire had been doing any such thing. “If you had him with a field of poppies, then I think you’ve got him propagating them in some way. Particularly with the cut poppies and extracting the chemical.” But without evidence that Hogshire had actually grown the poppies, the judge reasoned, there was no basis for the manufacturing charge.

The prosecutor sought to recover by citing snapshots seized in the raid that showed Hogshire in an unidentified garden with live poppies whose heads had been slit; he also claimed that “there are poppies outside of his apartment.” (There may have been an element of truth to this: according to Hogshire, his landlady had had opium poppies in her garden—though in early March, at the time of the raid, it would have been too early in the season for them to have come up.)

The judge was unpersuaded: “Can you tell me whether those are the relevant genus and species? My mom has poppies outside of her house.” The prosecutor could not satisfy the judge on this point, so the judge granted the defense’s motion to dismiss the sole charge against Hogshire.

One might think that this would have been the end of Jim Hogshire’s ordeal. But the state evidently wasn’t through with him, for in June, after dropping charges against Heidi in exchange for a statement asserting that everything seized in the raid belonged to her husband, the prosecutor refiled charges—this time for simple possession of opium poppies—and also added a new felony count to the amended indictment: possession of an “explosive device,” citing the thermite flare found during the raid. An arraignment on the new charges was scheduled for June 28. When Hogshire failed to appear, a warrant was issued for his arrest.

4.

I read through the court papers with a mounting sense of personal panic, for the squabble in the Seattle courtroom did not in any way seem