

OPIMUM FOR THE MASSES

A PRACTICAL GUIDE TO GROWING POPPIES AND MAKING OPIUM

Opium. Known as "The Mother of All Analgesics," it's probably the greatest pain killer ever discovered. Opium is the parent of morphine, heroin, laudanum, Darvocet, Darvon, and many other pain relievers. Opium causes poets to rhapsodize and nations to go to war. "Religion...is the opium of the people," said Karl Marx, but some people insist on the real thing. In *Opium for the Masses*, Jim Hogshire tells you everything you want to know about the beloved poppy and its amazing properties, including:

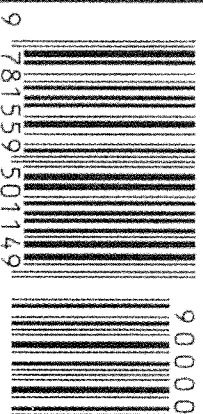
- What does the opium high feel like?
- How addictive is opium? How hard is it to kick?
- The stunning similarities between opium and your body's natural endorphins.
- What is the strongest drug in the world?
- Morphine and its derivatives, both pharmaceutical and street.
- How to grow opium poppies.
- Sources for fertile poppy seeds.
- How to harvest the opium from a crop of poppies.
- How to make poppy tea.
- Other ways of making and ingesting opium.
- And much more.

Jim Hogshire, the author of *Sell Yourself To Science*, is an expert on the history of medicines. As he reveals the secrets of the seductive opium poppy, he tells the sad story of prescription drugs: doctors, drug makers and governments prohibiting natural remedies in favor of harsh synthetic derivatives.

Opium for the Masses includes rare photographs and detailed illustrations that bring this magnificent plant to life. Don't miss this humorous, informative and practical guide to the most popular painkiller in the world.

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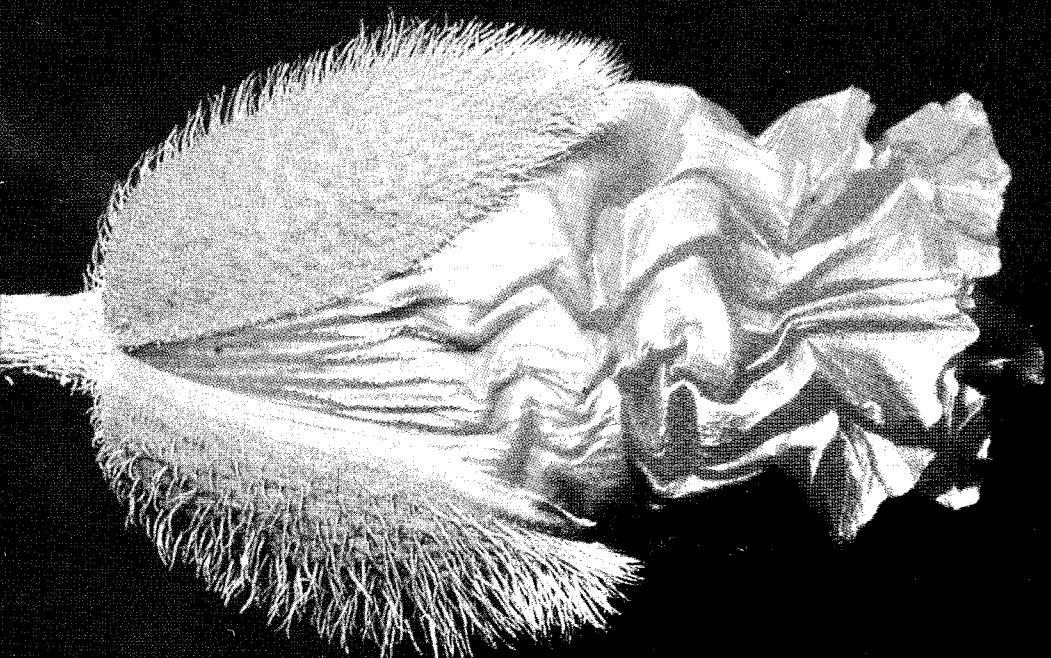
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Opium For The Masses

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Jim
Hogshire

OPIMUM FOR THE MASSES



JIM HOGSHIRE

"The finest new book on opium to appear in the last fifteen years concisely covers many aspects of opium... *Opium for the Masses* is subtly infused with Hogshire's subtle humor."

— *The Green Man*

"...not a Marxist critique of religion, nor a critique of television programming, but a 'practical guide to growing poppies and making opium.'"

— *Healthy & Natural Journal*

"*Opium for the Masses*... will guide you through the steps necessary in making opium and poppy tea."

Eye

"Here's everything you ever wanted to know about the drug opium."

Gray Areas

"No book has ever made me want to get high as much as this one has, even with its hair-raisingly realistic accounts of hideous withdrawal. Check it out."

Forrest Black, *Blue Blood*

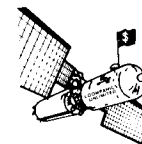
"In case you didn't know, I dig poppies... If you share my interest in these plants, you will want to direct your attention to Hogshire's slim but thorough survey of *P. somniferum*, in which he covers the plant's impact on human history, physiological effects of the drug, growing tips, simple extraction methods, and all the necessary legal information required to protect yourself and your property."

Kim Cooper, *Scram*



FOR THE MASSES
A PRACTICAL GUIDE TO
GROWING POPPIES
AND
MAKING OPIUM

BY JIM HOGSHIRE



Loompanics Unlimited
Port Townsend, Washington

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OPIUM FOR THE MASSES

A Practical Guide to Growing Poppies and Making Opium

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For
Heidi

Chapter One: Romantic Poets and Dope Fiends...

Just the sound of opium's name evokes an exotic, seductive feeling. Gorgeous dreams mixed with a quiet undertone of fear. The juice of the opium poppy is more than a drug in our culture. Used and venerated for thousands of years, opium has come to symbolize both beauty and danger. Its poetic nicknames are superlatives — Milk of Paradise, Plant of Joy, Destroyer of Grief.

From at least the time of Homer (who wrote of the drug in both the *Iliad* and the *Odyssey*) writers have praised opium for its seemingly divine properties. Victorian writers, especially, are famous for their love of opium. Poets wrote odes to opium and sought to describe the feeling opium gave them with other-worldly imagery. One writer said opium felt like "walking through silk." Devotees of opium displayed an unashamed and tender passion for their drug.

"Who was the man who invented laudanum?" wrote a 19th century British author about the opiated drink. "I thank him from the bottom of my heart..."

"I have had six delicious hours of oblivion; I have woken up with my mind composed... and all through the modest little bottle of drops which I see on my bedroom chimney piece at this moment. Drops, you are darling! If I love nothing else, I love you!"

Romeo and Juliet pale in comparison to such romance.

Falling in love with opium is easy. Opium always delivers on its promise. Smoked, eaten or drunk, opium never fails to banish fatigue and pain, to stimulate the mind and liberate the user from nervousness or worry. Another British gentleman of the 19th century said opium felt something like a gentle and constant orgasm! It gave him the same feeling he experienced at the end of a successful day and made the most mechanical tasks seem interesting. Such a drug is sure to have its fans.

And not only Brits loved the stuff. America's appetite for opium grew steadily throughout the 18th and 19th centuries. In 1914 a San Francisco newspaperman described his first encounter with the drug in an opium den in Chinatown. Although he had previously shunned the stuff as a drug of the yellow hordes, he at last relented and breathed a huge lungful of opium smoke. "In sixty seconds I was another man," he wrote, "My barren brain... leaped to its task. The ideas, the phrases, the right words, which, until then, had eluded my fagged mentality, came trooping forth faster than I could have written them had I been at my desk. My worries and responsibilities fell from me..."

"A half hour later I wrote a column of dramatic criticism that was quoted on the billboards and I reeled it off as fast as my fingers could hit the typewriter keys. I was never at a loss for a word. The story in its entirety seemed to lie ready in my brain. My task finished, I went to bed without my customary drink, and dropped asleep as peacefully as a child... I slept soundly and awoke refreshed and clear-minded with a zest for the day's labor."

Opium's ability to banish sadness, relieve pain, and energize the soul borders on the miraculous. Opium can release the most wretched from life's worst agonies. The 19th century physician, Horace Day, mentions opium when describing the ghastly post-Civil War Ameri-

can countryside. Amid all that suffering, this plant sap could offer refuge to displaced, half-dead people:

"Maimed and shattered survivors from a hundred battlefields, diseased and disabled soldiers released from hostile prisons, anguished and hopeless wives and mothers, made so by the slaughter of those who were dearest to them, have found, many of them, temporary relief from their sufferings in opium."

Yen For Opium

A love affair with opium cannot be taken lightly. The same poppy that can take its lovers to the gates of paradise has the power to send its slaves to a hell on earth, should they ever try to leave her.

Today the word "yen" means a kind of longing or desire. But its origin — from the Chinese *yenyen* — describes something more desperate — the torture of opium withdrawal. To yen for opium is to feel an intense lack of everything — of sanity, soul, and body — but mostly of opium. Opium yen is the singular and single-minded desire for opium.

Yen conjures up the image of a contorted, sweat-soaked figure writhing on rumpled bed sheets. Addicts kicking opium have described their nerves afire — "a thousand needles popping through the skin." Moving hurts. Lying still hurts. The body becomes a bloodless slab of pain.

Sleep is plagued with baroque nightmares and wakefulness feels as bad. Muscles contract suddenly so arms and legs jerk and kick without warning. This last feature of the yen has given us the expression "kicking."

Opium Addiction

— An Honest Disclaimer

Dependence.

Physical dependence on opium is a virtual certainty with prolonged and sustained use. There may be a psychological dependence on opium but that bears no relationship to the drug per se and has more

to do with a user's personality than anything else. Estimates vary, but the chances of psychological addiction to opium are no greater than with alcohol or marijuana.

Psychological dependence is not an inherent problem with opium. Opium cannot corrupt your soul or drive you mad. Opium use doesn't even cause any physical harm.

Psychological problems are beyond the scope of this book. You know if you've got a problem — with shopping, compulsive lying, or substance abuse. This book is about opium only and it's true that opium causes physical addiction — but not quickly and not forever.

"Addiction"

Opium withdrawal hurts, but the pain will end, usually within three to five days. That's how long the body needs to get shocked back into producing the chemicals replaced with constant opium use. Those are indeed hard days for the kicking addict but it is no worse than a nasty case of the flu. And like the flu, once the pain goes, it's over. The user is returned essentially to normal and feels no more physical craving for the drug.

This is even true of heroin, as William Burroughs admits in his novel *Junkie*. Burroughs says that once a (heroin) junkie has kicked, it is easy to stay away from junk. So it is with opium, from which heroin is derived.

"Relapse" is another phenomenon loaded with social connotations. For many people life is simply better with opium than without it — that they should seek it is hardly surprising. Addiction to caffeine, for instance, has all the same features of opium addiction. Dependence develops, withdrawal hurts and then you get used to life without coffee. Some people decide to go back to drinking coffee, some just abstain for a while and go back, but the lack of coffee rarely preys on their minds so much they cannot stay away.

It is also difficult to become physically dependent on opium in the first place. Before the body becomes truly dependent on opium (so that abstinence produces withdrawal symptoms) a user must take opium on a *daily basis* for at least a couple of months. It takes this

long for the body to "learn" to stop producing its own opiate chemicals and become dependent on an outside source.

Who's a Hophead?

In countries where opium is commonly used and in this country when it was freely available, it is plain to see that a portion of the population enjoys taking opium. But it has yet to harm any society. (Opium did not enslave China — Britain did.) To credit opium with such powers is simplistic: falling for the dreamy love poems or rabid hate-propaganda it has inspired.

Opium use in America rose steadily from back when Benjamin Franklin took it, until 1915 when it became illegal and usage figures become unreliable. Despite the fact that at least one out of ten Americans was addicted — a number cutting across all class and social lines — the U.S. was a prosperous nation. Universities were founded, science advanced, commerce blossomed, public works were carried out. By any measure of progress or success, the United States became in all ways more prosperous when drugs were legal.

It could be argued that the age of prohibitions that started in the late teens and twenties of this century has brought us more misery than drugs ever could.

Dosage

Dosage ranging is highly individual. Even the most devoted opium user finds a dose he's comfortable with. This dose can vary within a certain range but generally stays the same and isn't necessarily high. Use tends to increase at first, then reach a plateau. Although tolerance can develop quickly or slowly, it is not an inexorable upward spiral toward impossible amounts of the drug and exorbitant consumption.

Most people, when allowed free access to any particular drug, do not go bananas over it. The use of alcohol in our society is proof of that. Most people don't drink alcohol all the time. The same goes for coffee.

Pharmacologically, opium use is also self-regulating. When eaten, it is subject to a "first pass" through the liver where a considerable amount is inactivated. Using larger amounts to compensate for this

effect begins to pose a physical problem for the user — one can only swallow so much opium before getting sick, or at least getting full! Smoked, even less of the active parts get through to the bloodstream and, once again, increasing the dose poses practical problems.

Still, the pleasure provided by opium makes continuous use pretty easy to accomplish. On the plus side of kicking, most addicts know that, once free of the drug's physical hold, it is enough to skip a day or two between uses to avoid re-addiction.

All Those Famous Addicts

Poetic testimonials to opium — especially by 19th century writers — have typically been used to defend opium use. When such brilliant minds as Ben Franklin and Thomas De Quincey use opium, the argument goes, isn't it obvious that it is harmless? Drug-use promoters of the 1960s, especially, seemed to constantly thump the cover of a copy of De Quincey's *Confessions of an English Opium Eater* while making the case for marijuana. Mention of these famous Victorian era authors and their use of opium has become mandatory when discussing drug use. (See? I had to do it, too!)

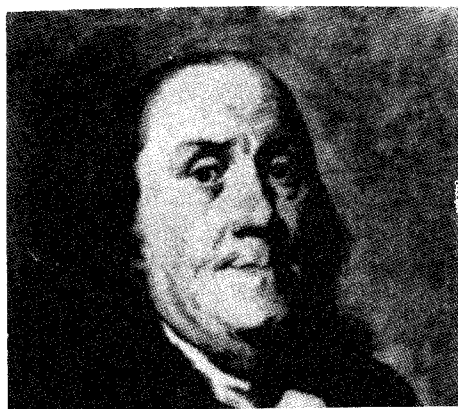


Figure 1-1

Benjamin Franklin

(Courtesy Independence National Historical Park)

But this is not a book about marijuana and it is not about heroin. Neither one is like opium. Even though heroin is an opiate (opium-derived), it is pharmacologically distinct. Later incarnations of the morphine molecule are even less like opium.

Opium addiction — as we now define it — played no part in the lives of opium users before the 20th century. Even as society began to criminalize opium and heap scorn on its user, the word "addict" was not used. At the time, doctors spoke of "habitués" — and without alarm. And why should they? Opium does not cause any harm to the body. Opium users still got up in the morning and went to work, had families, and paid their bills. What was there to be upset about?

Dependence on opium was observed but was not associated with the same kinds of value judgments it is now. An addict was not a "dope fiend" or any other kind of anti-social monster. This is not to say dependence on opium (or alcohol) was considered a virtue. Opium addiction was not viewed as a particularly good thing and many addicts denied or hid their dependence. Lots tried very hard to kick the habit.

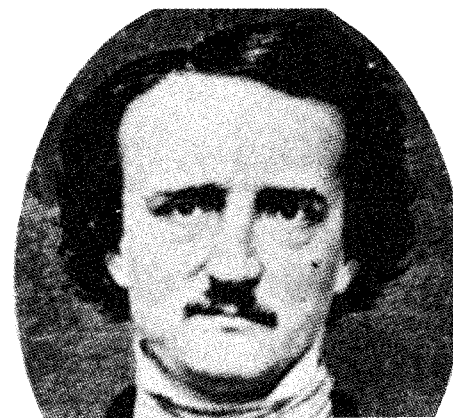


Figure 1-2

Edgar Allan Poe

(Courtesy National Archives, Brady Collection)

They tried to kick because, in their world as in ours, dependence was a negative trait. Perhaps it indicated a lack of moral fortitude or implied some other kind of weakness. But opium addiction, like alcohol addiction, was not criminal. Opium addiction wasn't considered

important in any medical sense. Doctors often remarked of their patients who tried to shake the habit that they could see no reason for all the trouble. Since opium did not interfere with their lives or health — so what?

Those who liked opium took it. Those who didn't like it, didn't take it.

So to speak of Edgar Allan Poe, "opium addict," is next to useless, since this feature of his life probably meant as much or as little to him as any other facet of daily life. We may as well speak of Edgar Allan Poe, "rent payer."

This book is about opium and anything germane to the subject. Opium's addictive properties are germane. The information I put down here is true to the best of my knowledge. There is a lot of misinformation out there about opium and opium poppies and one of the most misunderstood aspects is "addiction."

So, while I don't recommend dependence on anything, opium is relatively benign — unless, of course, you run out!

The Worst Thing About Opium Addiction

In my opinion, the biggest problem of opium addiction is one of supply. Any others (social ostracism, criminal sanctions, etc.) are manmade.

Opiate dependence — especially if used to control chronic pain — does not interfere with normal life. Those with an adequate supply do not suffer as long as they have the drug. Sick people suffer if they do not have it. History is full of famous opium addicts whose habits did not interfere with their lives. History is even fuller of regular folks of whom the same is true.

Opium's hold over a user is hardly unbreakable. The pitiless monkey on the back of an alcoholic or cigarette smoker just isn't there for most opium users who become dependent. The dependence is manageable, inconspicuous and not debilitating.

Addiction might not be any more of a "problem" than a dependence on blood pressure pills. Your life may very well be improved through the use of opium. Then again, maybe not. Most probably your life will hardly be affected.

There is also the chance you won't like it. After all, back when opium was as available as aspirin, most people still passed it up.

For many, the good to be gained from opium far outweighs its potential dangers. And, like other opium fans, I defy anyone to compare the destruction wrought by the natural consequences of drinking alcohol with whatever minimal difficulties may be caused by opium use. I further challenge them to show me any serious evidence that opium is any more harmful than carrots.

Chapter Two:

Origins and History of Opium

Fossilized poppy seeds and other archeological evidence show the opium poppy was used by Neanderthal man as long as 30,000 years ago. Prehistoric use of poppies probably went beyond the use of opium, as the poppy yields abundant quantities of nutritious seed, which can be eaten raw or cooked. The dried plant also provides a clean-burning fuel and poppy straw is still used today for animal fodder. Its drug qualities could have also fulfilled a religious role of some kind.

Written evidence tells us the opium poppy has been with us for at least 6,000 years. Sumerian ideograms from about 4,000 B.C. refer to the poppy as the "plant of joy." Opium poppies were cultivated for millennia by the civilizations of Mesopotamia, Persia and Egypt. In Greece, especially, the poppy occupied an important place in medicine and mythology.

Homer wrote that Helen of Troy served opium dissolved in wine as a potion to cause "forgetfulness of evil." The Greek goddess of agriculture, Demeter, searching for her daughter Persephone came to a place once known as "Mekone" or "city of poppies." It was there that she discovered that by tasting the gum oozing from the poppy capsule, she was immediately relieved of her sorrow. Because of this, ancient Greek drawings of Demeter often portray her holding a small bouquet of poppies.

Other gods were shown with poppies, including Nyx (goddess of night), Hypnos (god of sleep), Morpheus (god of dreams), and Thanatos (god of death).

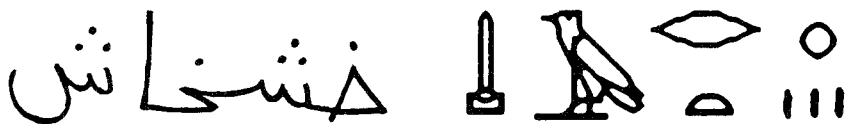


Figure 2-1

*The Arabic word for "poppy" (left)
and hieroglyphics for "opium" (right).*

One Greek word for opium is *mekon* or *mekone*, the latter being the name of the prehistoric city later known as Kyllene. The word *mekone* means something like "Poppy Town" is associated with Hermes and is the place where Prometheus first brought fire to humans. Our own word, "opium," comes from another Greek word — *opion* — meaning "liquid." The Greek word appears in many variations around the world. In Arabic the word is *afioon*, in Urdu, *afim*, and *a-fou-yong* in some dialects of Chinese. Even the Chinese word *yen* (which describes more than one aspect of opium) appears to derive from Greek. Even the Japanese *mayaku* may be related to the Greek *mekone*. In any case, opium was not cultivated in Japan until the 15th century, so the plant may very well have a "foreign" name there.

Images of poppy plants, often in ceremonial use, can be found on coins and drawings in the ruins of past civilizations in Greece and

other areas of the Mediterranean. Although it is often said that opium smoking was not practiced by Europeans until the late 15th century, ancient pipes found in Cyprus, apparently used for opium, date from the late Bronze age (c. 1200 B.C.). Vases from this same period depict methods of incising the capsule, to gather opium.

As mentioned earlier, ancient Egyptian medicine made use of opium, and medical papyri describe hundreds of prescriptions containing opium. The substance appears in about one third of the formulas uncovered to date. Later on, the Egyptian city of Thebes became well known for its opium and the standard Egyptian opium was called Thebic opium. Today one of opium's most important alkaloids, thebaine, reminds us of this city.

The Romans used opium extensively, and the drug was sold everywhere in the streets of the eternal city. The Roman poet Virgil mentions opium in his *Aeneid*, while Rome's greatest physician Galen (who shaped European medicine for several hundred years) gushed over its properties in his medical treatises.

The famous Persian physician Abu Ali al Husein Abdallah ibn Sina (known in the West as Avicenna) was another proponent of opium, prescribing it for diarrhea, cough, diabetes, anemia and other afflictions. Avicenna's medical work, *Canon of Medicine*, superseded Galen at the beginning of the Renaissance and became the basis for Western medicine right through the 1800s. Apparently Avicenna himself was an enthusiast of opium.

Persians and Arabs called the flower *Qashqash* (or similar variations — the name imitates the sound of poppy seeds rattling around in the dried capsule) and poppies and opium were an important part of their system of medicine.

As the spread of the word "opium" indicates, use of the poppy's juice seems to have spread outward from Greece — and fairly quickly. By no later than the eighth century A.D. poppies and the use of opium had spread throughout Arabia, India, and China. Its northward journey took a bit longer, but by the 11th century, opium was in use all over the Eurasian continent.

Although opium was known to medieval Europeans, the drug jumped in popularity when Crusaders, returning from their attacks in the Middle East, brought back Avicenna's new medicines — along with silk, soap, and remission from all their sins. A narcotic potion

containing a large amount of opium was in widespread use in the Middle Ages. In medieval England we have a recipe for a knock-out drink used to render a patient unconscious "while men carve him." Other potions were simply used to bring on sleep. Sometimes called "dwale," such an opium-based medicine is mentioned by Chaucer in *The Reeve's Tale*:

To bedde goth Alyn and also John
Ther nas na moore — hem nedede no dwale.

Shakespeare refers to opium in *Othello*:

Not poppy, nor mandragore,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow'dst yesterday

Opium's rediscovery helped make the careers of Renaissance doctors such as Paracelsus (1490-1540) who referred to the stash of opium kept in his saddle as his "stone of immortality." Paracelsus was also the inventor of laudanum (from Latin meaning "praised"), an opium preparation still in use today. Although laudanum has many permutations, the original (probably in pill form) contained not only opium but henbane, crushed pearls, frog sperm, and cinnamon. Today laudanum is made by dissolving opium into alcohol, and is probably just as effective.

Laudanum and other opium-based medications got more popular in Europe until it seemed no self-respecting author or poet could call himself such unless he used it. Men such as Thomas De Quincey and Samuel Taylor Coleridge were heavy users of opium, as was Edgar Allan Poe. Poems such as *The Raven* seem to be the products of opium dreams, nebulous moods and fantastic images that reflect typical effects of opium.

Although there is no evidence that opium can make a dullard into a literary genius, it's clear opium was instrumental in the lives of some of these artists. And they didn't hesitate to credit their laudanum. When Coleridge awoke from an opium dream to pen his famous poem *Kubla Khan*, he made sure to refer to his own "mother's little helper":

And all who heard should see them there,

And all should cry, Beware! Beware!
His flashing eyes, his floating hair!
Weave a circle round him thrice
And close your eyes with holy dread,
For he on honey-dew hath fed,
And drunk the milk of Paradise.

Chapter Three: What Opium Feels Like

Ancient Greeks called it "destroyer of grief" because opium not only frees a person from physical agony, it releases him from psychic pain as well. Even today, in many places in the Middle East, chilled glasses of poppy tea are traditionally served to guests at funerals to ease their sorrow.

Sumerians called poppies "plants of joy" because of the euphoria they bring. But poppy euphoria is very different from the euphoria produced by laughing gas, alcohol or amphetamines. Opium euphoria is more gentle and not at all boisterous. It is not the delirious euphoria of barbiturates or alcohol.

Opium is the mother of all analgesics. There is not much pain that can withstand the effects of opium. Its isolated alkaloids and the semi-synthetic drugs derived from opium have proven so remarkable that scientists have returned to opium again and again in attempts to learn its secrets. Such investigation has led to milestones in the study of

endogenous chemicals and their various receptors controlling pain, mood and even the immune system.

As a "recreational" drug it is both energizing and calming. The effects of opium are fairly predictable, running along a continuum of feelings roughly corresponding to dose, but certain features are always present in an opium high.

Small doses produce a sense of well-being and relaxation. Opium is so effective at relieving tension that it's probably the greatest reason for its former popularity as an ingredient in patent medicines, especially those for maladies called "nervous ailments." Indeed the word "tranquilizer" was first coined to describe opium. Today opiate use to combat anxiety has been replaced by the use of other tranquilizing drugs such as Valium or other benzodiazepines, which act more specifically than opium.

But opium's relaxation is not especially soporific or hypnotic. The sleep it produces is not deep and for all the talk of "opium dreams" there is some evidence that opium even suppresses the REM stage of sleep normally associated with dreaming. For this reason it's better to consider these dreams as a form of hallucination.

For years the drug was considered a stimulant (in England, it was sold in pubs to help drinkers "sober up") not so much because it increased energy levels as for its ability to stimulate the mind, as the anonymous newspaperman quoted at the beginning of the book attests. Opium also stimulates the mind in ways much more difficult to articulate, ways that give the user another look at reality. In the end it is not really possible to describe opium, but lots of people have tried.

In 1842, William Blair wrote of his experiences with opium for a New York magazine. He does as good a job as anyone in describing the first flush of opium and its poetic effects on perception.

"While I was sitting at tea, I felt a strange sensation, totally unlike any thing I had ever felt before; a gradual creeping thrill, which in a few minutes occupied every part of my body, lulling to sleep the before-mentioned racking pain, producing a pleasing glow from head to foot, and inducing a sensation of dreamy exhilaration (if the phrase be intelligible to others as it is to me), similar in nature but not in degree to the drowsiness caused by wine, though not inclining me to sleep; in fact so far from it, that I longed to engage in some active exercise; to sing, dance, or leap."

For amusement he went to a play where "so vividly did I feel my vitality — for in this state of delicious exhilaration even mere excitement seemed absolute elysium — that I could not resist the temptation to break out in the strangest vagaries, until my companions thought me deranged."

After clowning around for a bit, Blair took his seat and literally took in the play. "After I had been seated a few minutes, the nature of the excitement changed, and a 'waking sleep' succeeded. The actors on the stage vanished; the stage itself lost its reality; and before my entranced sight magnificent halls stretched out in endless succession with gallery above gallery, while the roof was blazing with gems, like stars whose rays alone illumined the whole building, which was thronged with strange, gigantic figures, like the wild possessors of a lost globe... I will not attempt farther to describe the magnificent vision which a little pill of 'brown gum' had conjured up from the realm of ideal being. No words that I can command would do justice to its Titanian splendor and immensity."

As the dose of opium increases, relaxation and contentedness become even more blissful and euphoric. The kind of quasi-hallucinations Blair refers to are common but in no way similar to the harsh and powerful hallucinations brought on by psychedelic drugs like LSD. The "visions" are gentle, dreamlike and do not dominate the experience. Opium hallucinations are more an addition to reality, rather than an intrusion, and such hallucinations vanish upon direct attention. The sound of voices in happy conversation off in the background fades away when you try to listen too carefully.

The same goes for visual images. People report animals, from squirrels to tigers, being present in the room with them. As always the animals are harmless and cause no alarm, only interest. But should you try to touch them, or to scrutinize the hallucination too carefully, the vision melts away just as in a dream. More opium increases the blur between thought, dream, and reality.

Another famous opium fan was the movie star Errol Flynn who wrote of his drug experiences in his 1960 autobiography, *My Wicked, Wicked Ways*. Here he gives us an account of an opium high, along with something of the flavor of a real-life opium den. Guided by a beautiful Chinese girl named Ting Ling, Flynn finds himself smack in the middle of an early American opium den:

I entered and was confronted with a dark blue haze and a curious odor. There were only two people here. Sure enough they were on their elbows. The blue haze seemed to hang over them.

I sat on a soft mat. Ting Ling sat beside me.

A man entered the room with an orange that was cut in half and a lamp which was half copper, half jade. He scooped out the pulp interior of the orange and bored four little portholes into it. I watched Ting Ling while this operation was being done. Her eyes were wider as she looked at the little lamp.

A tiny flame was put in the empty half-orange.

The man also had what looked like a tin of English tobacco.

In Chinese Ting Ling had a long debate with him. I figured she was fixing the price.

Quickly a round wooden pillow was put near me. "Lie on your elbow," she panted. "Lie down. Relax."

Ting Ling arranged the pillow with a little impatient gesture, and I was made more or less comfortable.

She herself sat cross-legged, that blue haze around her, like a goddess, enchanted, distant, close, mysterious, all things.

The attendant took out two instruments like crochet needles. He opened the tin box and removed a black treacly substance — opium in the raw.

Ting Ling looked down at it carefully, nodded brightly. "Very good stuff. Very good."

Sitting cross-legged, the attendant cooked this inside the orange and the flame. It bubbled. He mashed it skillfully, delicately, like an artisan.

My eyes followed the work, fascinated.

Here he produced a magnificent instrument. It looked like an early saxophone, but small at each end.

Ting Ling took the freshly prepared pill from the attendant and put it in the end of the piccolo-like instrument, jamming it in.

She inhaled and held.

I counted. It was a long time.

Very slowly she exhaled.

She puffed very strongly, sibilantly inhaling. In a most truly graceful way she lay down beside me.

Silence.

She lay there staring into the ceiling — that lovely neck, beautiful face. Her figure writhed a little beside me on the mat.

After a time she slowly turned to me on her left elbow. "Now, darling" — the first time she had ever called me that — "your turn. You see what I do?"

Surprisingly she lapsed into pidgin English. "You do same. All same."

I grabbed the instrument and drew on it. The taste was unlike any tobacco that I ever had but not unpleasant. Certainly it wasn't burning my throat in any way.

The man prepared another little round black pill, stuck it on the end of the crochet needle and put it inside the orange. I tried to hold it and go through the same motions as Ting Ling had done.

She seemed to be looking at me with a far-away amusement. "Do you feel anything?" she asked.

"No." I didn't, except that I had a feeling I'd like to open the window.

"All right. Finish that one. Then lie down."

Together we lay side by side, both staring at the ceiling.

Suddenly that ceiling seemed to take on a new dimension. I felt Ting Ling's little hand on my right wrist. "How you feel?"

"Fine."

"You take a little bit more."

She said something in a soft tone to the fellow who prepared the smokes. He prepared another little pill.

The half-orange had grown bigger. Somehow, I don't know, but it seemed that it should be hanging from the ceiling like a Chinese lantern and my eyes were glued to it, fascinated.

I took the next *umchuck*, as Ting Ling told me it was pronounced in Macao.

Lying back, I began to feel a sense of panic. The orange in front of me was no longer an orange. It was a big old lantern, but it was now hilariously funny, because it was doing a dance and smiling at me.

Next thing my mind was clear as a crystal and I saw things as I have never seen them in sober perspective.

My life came before me.

It made sense.

There was this beauty beside me, looking into my eyes with what I believed was true tenderness, even passion.

I stroked her.

A lethargy came over me.

My body came out of my body. There I was on the floor, facing Ting Ling. It was extraordinary how my other body — I had two — hovered above me looking down. There was Flynn, four feet over my head, floating, held by invisible strands of I don't know what, a thing ethereal, bodiless, motionless, relaxed, amused by the whole facade and procession of his life.

Here was my love of my life by my side; so now we were three.

I whispered in Ting Ling's ear with what I can only suppose was the most stupid giggle. "Darling, darling, don't I look strange?"

She looked at me.

I said, "No no. Me, up there."

She looked up and a strange smile crossed her lips. She said, "Put your head back. Dream."

I did.

I don't know how long it was I led a completely dual life, the one above me watching everything I did.

I was quite in charge of my limbs. As a matter of fact I seemed to have the strength of four men, let alone two.

When I took Ting Ling to another room I had never known I was capable of such feats.

Today I'm told that the effect of opiates removes sexual desire in the man in inverse ratio to the female, who becomes more excited. Dr. Flynn can tell you that such is not the case.

I made love to Ting Ling in ways and manners that I would never believe myself capable of.

Other Effects

On a physical level, opium was and is still used by those engaged in heavy labor. For them, opium increases their stamina and resistance to boredom. The overwhelming drudgery of a sharecropper or deck-hand would be unbearable without the drug. Chinese coolies of the last century and many Indian laborers today find that a morning dose of opium is essential for performing the hard work of poverty. Another dose in the evening serves to ease the pain of aching muscles and any other misery.

Opium smokers typically take the drug in this twice-a-day fashion. The amount of opium needed by any particular user tends to rise and fall in response to outside factors such as stress. Although a user's needs will almost invariably climb at first, eventually a standard dose will establish itself.

Partly this is due to the fact that, in many ways, opium is self-regulating. At a certain point a person will get sick to his stomach if he eats or smokes too much of it. To match the effects produced by common amounts of synthetic drugs would require a user to gobble down pounds of opium — a physical impossibility.

Other evident physical effects of opium are constricted pupils and itching, especially on the nose. Interestingly, there is no tolerance to pupil constriction. It happens to every user every time. The itching feeling is not unpleasant. Although you can relieve it by taking an antihistamine, most people find they enjoy it and you'll find opium users blissfully rubbing and scratching their faces. The itch is not strong, nor is it irritating, so there isn't any temptation to scratch to the point of injury.

Opiates also paralyze the bowel, which can ease stomach cramps and also cause constipation. In most people this doesn't cause any problem, or if it does, it can be remedied by the use of a laxative.

Stories of severe intestinal impaction are told but such cases are rare and normally associated with some of the stronger, synthetic opiates, not opium.

Another effect is a difficulty in urinating, especially in starting the flow of pee. Some people can take care of this by tickling their buttocks with their fingertips.

Sweating, too, is a common effect of opiate use and even continues after use is stopped. This is also one of its therapeutic features and opium mixed with ipecac used to be prescribed as a sudorific, a sweat-inducer.

Chapter Four: Some Perceptions of Opium

For a long time opium was one of the few really effective medicines in a doctor's pharmacy. As newer medicines such as aspirin, chlorals, and barbiturates were introduced, opium began to be seen as old fashioned. Strangely enough, opium itself, in the form of some of its refined components like morphine and codeine also helped push pure opium out of general use in medicine. Eventually opium became known as a drug used only by devious Chinese people, urban scum, urbane flappers and stars of Hollywood.

And, of course, every town of any size in the wild west had its opium dens where opium and women were available to the dusty cowboys.

One of Thomas Edison's first movies was entitled *The Opium Smoker* and treated the proto-moviegoer with a look inside one of the fabled "opium dens" rumored to be in every city — traps for otherwise morally upright youth — morally upright white girls especially. The

opium den still evokes a powerful image today, serving as the archetypal "den of iniquity."



Figure 4-1

White opium smokers in a San Francisco Opium den circa 1890.
(Photo courtesy of Michael Starks.)

Leering villains and innocent teenage prey were not the only ones to become enamored of the juice of the poppy back in those days. It's true lots of famous writers and artists used opium regularly — and so did the "common people." But the common people's use of opium was portrayed by anti-opium politicians as vile and unbridled. It was thought that opium's effects differed depending on class or race. Laborers and Chinese people were thought to be more adversely affected by opium.

Not so the movers and shakers. The upper crust was fond of drinking laudanum, or spending a pleasant afternoon sucking on opium or even morphine throat lozenges. Winston Churchill seems to have been a great fan of this panacea-like substance, particularly partial to preparations containing heroin, if pharmacy records for his family are any indication.

Poor slobs trapped in Industrial-era sweatshops used opium only when they could not afford gin — interesting considering that opium is cheaper, healthier and doesn't cause fights or hangovers. A night's

drinking could easily bankrupt one of these wage slaves, so opium was a staple. It was used even more by women who were excluded from public bars. It was used by children for almost any reason, often to bring on sleep or, tragically, to keep them safe and immobile while mom went to slave beside her husband in the factory.

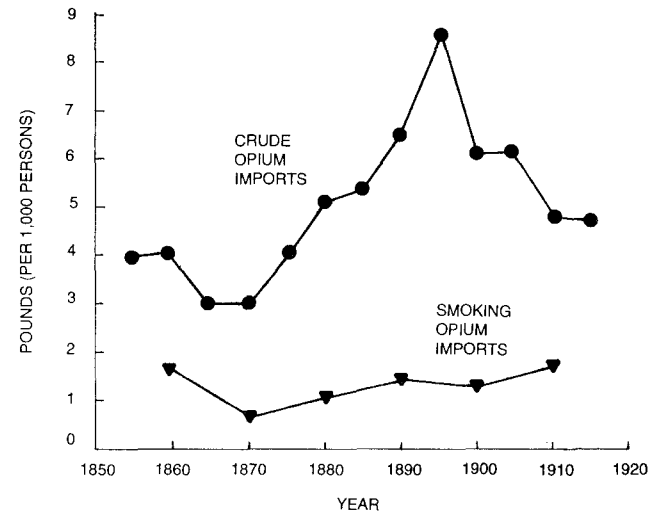


Figure 4-2

Opiate consumption in the United States, based on figures collected by the Treasury and Commerce Departments. The importation of smoking opium became illegal in 1909. The importation of crude opium was severely restricted in 1915.

In America, perhaps a good tenth of the population was addicted and many more than that were frequent users.

Luckily, opium was abundant. Opium was sold by the pound in grocery stores and was used in about $\frac{1}{3}$ of the medicines of the 18th and 19th centuries. The percentage of nostrums containing opium remained roughly the same over the years, not subsiding in this country until the advent of chemical tranquilizers and barbiturates. Today, these two drugs, along with totally synthetic pain killers such as Demerol, have largely replaced opium and its direct derivatives, which is really too bad since there is every evidence that these other potent and specific drugs have truly debilitating effects on chronic users that would be avoided by the use of opium.

Opium as Gift of God

Many physicians of past centuries considered opium divine in origin. A plant capable of such miraculous deeds seemed supernatural. Today, the belief persists because of some startling similarities between opium and certain chemicals produced in the human body.

The effects of opium are closely related to a number of brain chemicals known collectively as endorphins, which stimulate different areas of the brain known as endorphin receptors. All vertebrate animals (and even some invertebrates) have the same system of endorphins and endorphin receptors in essentially the same parts of the brain and in the same concentrations. From what we know of the evolution of the human brain, it is clear that this system of opioid (opium-like) chemicals has been with our species for a long time and is at least as important for the survival of our species as our ability to manufacture antibodies or blood cells.

Opium, that complex mass of alkaloids, is more than just plant juice to the human body. It can be thought of as a guide to understanding our bodies, and a sort of yardstick for some of our most delicate and important brain functions. Opium is related to much of our basic brain chemistry rather like the earth's water is uncannily related to the human body. Sea water is of roughly the same salinity as human blood and the earth's surface is covered by about two thirds water — the same proportion that makes up each cell in the human body.

Each of the many constituents of opium (see Figure 8-1) has an effect on our brains. Various combinations of these ingredients have different effects still. This interplay of chemicals is mirrored in the brain's own natural chemicals that are so similar to opium chemicals as to be practically interchangeable. Opium's chemical structure is so astonishingly similar to chemicals we need to survive, it seems impossible that it could be a coincidence. That the poppy contains opium is as miraculous as slicing open an exotic fruit and using its juice as a substitute for blood.

The body's own version of opium — endorphins — is not a single entity and neither is opium. Morphine may appear to be the most "important" constituent of opium but that is a gross simplification. Opium could not be what it is without morphine but to ascribe its

powers to this single alkaloid is like saying blood's most crucial ingredient is water. You could make that argument (dry blood would be pretty useless, after all, and saline solution can act as a stopgap in case of blood loss), but it falls far short of accounting for blood or its functions.

Yet something like this has become to the prevailing view of opium.

Unfortunately, the emphasis science has put on morphine (and its chemical cousins) has obscured the true nature of opium. Today the Western world thinks of opium as nothing but a crude substance exuded by an exotic plant. It's possible to make drugs out of it (even essential ones), but our modern world prefers its own, more "miraculous" products of high technology. To the Western world today, poppies have become forbidden fruit, linked in the public mind with illegal drugs only.

Chapter Five: Understanding Opium, Part I

The "Discovery" of Morphine

Opium fits so well into the brain that it is uncanny. The ease with which chemicals in opium are interchanged with chemicals needed and manufactured by the body has led to the suspicion that poppies were placed here on earth for the express purpose of providing opium, a kind of neural "nutrient." Fascination with opium's effectiveness helped spread and establish its use in medicine and other endeavors. It also motivated European man to tinker with it, to take it apart and see what made it tick.

It was this investigation into opium that caused a fundamental change in the practice of pharmacy in the Western world, bringing us along a path we still follow today. For one thing, the isolation of morphine from opium gave us the pharmacological concept of "the active ingredient."

Morphine As Miracle

Prior to the middle of the 19th century, plants, and to some extent, animal and mineral products, formed the basis of all medicines. Foxglove tea was used successfully to treat congestive heart failure. Willow bark was used as an analgesic. And opium was used to treat almost anything. One of the biggest reasons for the widespread use of opium was the fact that it worked — worked well and predictably. It controlled pain. It could stop coughing, promote sleep, increase appetite, relieve melancholy and halt diarrhea. Opium, in contrast to a lot of other nostrums, really did something. It had broad therapeutic value and was the workhorse of medicine.

Then came morphine.

Morphine was discovered in 1803 when a German scientist, Hans Sertürner, isolated the principal alkaloid in opium and, after testing it a bit, declared morphine the thing that made opium work. The simple beauty of his discovery changed pharmacy from then on. By using pure morphine (named after the Greek god of dreams, Morpheus) doctors could attack pain with a more devastating effect than opium alone could provide. With the invention of the hypodermic syringe, morphine's fate was sealed. It became a certified miracle. Physicians started to become gods.

An injection of morphine could instantly erase the most horrible suffering. Freedom from pain brought endless gratitude from patients. Opium could never do this. It worked too slowly, could not be injected and, to get such powerful analgesia from poppy latex alone would have required an enormous amount of opium — the patient would get sick.

Opium strength varied, too. With morphine it became possible to know the precise strength of a dose. Science enabled the doctor to calibrate nature. Science had triumphed, unlocked one of God's secrets. Opium had been demystified. Once the morphine had been extracted, it was thought that the rest of the opium could be thrown out. There would be no discovery this amazing, this miraculous, until the introduction of antibiotics a hundred years later.

Further dissection of opium turned up still more alkaloids which were duly assigned varying degrees of importance. Codeine was next

in 1832, and its ability to still coughs and produce analgesia was noted and logged. Various theories abounded about the role of the other chemicals in opium but there was no turning back from the age of "the active ingredient." With morphine, plant medicines began to be seen as crude and homely. Soon, alkaloids and other substances extracted from plants were the order of the day. No more belladonna for cramps; now physicians used its derivative, atropine. Foxglove yielded digitalis. Quinine was extracted from willow bark, and so on.

Now the whole pharmacopia was revamped as "folk remedies" gave way to purified forms of their "active ingredients." Further chemistry conjured up things that didn't even come from plants at all! Like medieval alchemists who thought they had found the "spirit" of wine by distilling out ethyl alcohol, natural products, from hemlock to animal testicles, were ground up, bathed in acids, heated, evaporated, electrocuted, and dried — until they gave up their "spirits" to the new medicine.

Anything seemed possible now. The isolation of morphine marked a sea change as chemists began churning out compounds that promised an end to all sorts of human misery. People started talking about fantastic ideas like birth control pills and medicines to stop infection. Even dread diseases like syphilis and rabies started to crack under the onslaught. The future gleamed and plant medicines were left behind for primitive folk who knew no better.

Rather quickly, medicines were created that could kill cancer cells or release schizophrenics from their private hells. Diabetics started to live decades longer and the number of truly active drugs mushroomed.

Scientists kept tinkering with morphine, creating semi-synthetic versions of the molecule, such as heroin. When heroin came on the scene in 1898 it was considered far better than morphine because it was far stronger. By adding two acetyl groups to the morphine molecule, chemists created a brand new substance capable of delivering at least twice the amount of morphine to the brain. Later developments eventually brought us synthesized molecules having as much as 3,000 times the pain-killing power of morphine. An amount of etorphine (perhaps the most potent substance in the world) measured in millionths of a gram packs the same analgesic punch as a hundred pounds of opium.

Research into opiate synthesis continues today but opium is no longer a subject of much scientific interest. By the beginning of this century, opium (though far better understood and described in a technical sense than ever before) was becoming seen as old-fashioned and maybe even bad for you. Within a decade it had become a symbol of depravity and crime — where it remains today in the popular mind — an illegal and dangerous drug that might just pervert your daughter into fucking a Chinaman. Opium established another first in America when, in 1915, it became the country's first illegal drug.

On The Other Hand...

Not all scientific inquiry led us to such dubious prizes as morphine, an amazing drug for sure, but definitely not the spirit of opium. It wasn't long before people began to explore the why and how of these new drugs, leading to still more new compounds. For instance, once an understanding of antibiotics was attained, it became easier to develop different ones.

Advancements in neurology and psychiatric pharmacology revealed the existence of brain chemicals, which led to the concept of "receptors" within the brain for these chemicals. The body had already been understood as a mechanical and hydraulic system. Now the brain, too, was a machine full of little switches operated by electricity and chemical reactions.

Some of the switches appeared to operate when certain chemicals fit specific receptors like a key in a lock. Now a lot of things started to make sense. Instead of gross medication of a problem, in which a medicine treated a symptom but also affected a hundred other aspects of a person, it seemed possible to begin crafting drugs that could do just one thing and one thing only.

Such a drug would be like Cinderella's glass slipper. Perfect. Specific. Ultra-refined.

The search for other receptors, locks with no keys, was on! Instinctively, scientists reached for their opiates.

Because of research done into the mechanisms of opiates, discoveries of other types of neuro-receptors have been made. For instance, we now know that diazepam (Valium) and its many similar compounds

called benzodiazepines produce their anxiety-relief, muscle relaxation, and other effects by stimulating specific benzodiazepine receptors in the human brain.

Brain chemicals synthesized from proteins were recognized as the engines of "thought," even feelings. Receptor studies led to chemicals that stimulated or blocked reactions at receptor sites to achieve a desired physiological response. This in turn affected psychological responses, too. The latest anti-depressants work at specific serotonin receptor sites (each with its own name and number) to eradicate sadness and fear. Ulcer medications, too, operate on the same principle of receptor sites and antagonists.

And this same line of inquiry, which gave us Prozac and Tagamet, leads us right back to opium. Specifically it leads us to polypeptide chains of amino acids of stunning construction known as endorphins.

Chapter Six: Understanding Opium, Part II

Endorphins

It's one thing to speak of "walking through silk" and another to chatter away about polypeptide chains and kappa receptors. It may not be as poetic, but an understanding of opium is impossible without looking at what we have learned about its pharmacology.

So far, though, we have only scratched the surface. Most experiments on opiate receptors have been done using a single alkaloid of opium and carefully observing its action. If that alkaloid happens to be morphine, then we have only 38 other chemicals to look at. If it's methadone, well, then all bets are off. It's hard to assess what methadone studies tell us. Methadone never occurs in nature and is the product of some brilliant minds trying to make a morphine substitute.

Experiments using any of the myriad semisynthetic opiates available (as is usually the case) give us data of the rawest kind. Even

though all information obtained by such experiments is undoubtedly useful, it doesn't tell us a lot about poppy juice. Studies on the chemical action of heroin are a sideways (and narrow) approach to investigating the vastly more complicated actions of something like opium.

Nevertheless, we've found out a lot about endorphins.

Endorphins have come into common parlance as the chemicals responsible for the famous "runner's high." It is generally understood that the body produces endorphins as a response to stress, particularly physical pain. One of the effects of these endorphins is a mild euphoria along with analgesia. People getting tattoos also report a kind of high they get from repeated jabs with a needle.

That endorphins are very powerful is borne out by the way many runners become truly addicted to their sport. If an addicted runner cannot run at least a few miles a day he may become depressed and eventually start to feel sick. In other words he begins to feel the withdrawal effects from his self-produced fix. He starts jonesing for chemicals from his own, in-house endorphin lab.

The word endorphin comes from mashing together the words "endo" (Greek for "within" or "inside") and "morphine." But the name is deceptive, for endorphins are far more complicated and much subtler than simply "head-morphine."

The Scientists Get Ugly Over "Head-Morphine"

Although the existence of opiate receptors had been *theorized* for a long while, it was not until 1973 that an opiate receptor was scientifically identified — and then, curiously, at least three major laboratories around the world happened to discover it almost exactly at the same time.

The announcements — by Candace Pert (and her professor Solomon Snyder) at Johns Hopkins University, Eric Simon at the New York Medical Center, and Lars Terenius at Uppsala, Sweden — all came at the same time. It was really and truly a dead heat, with no clear "winner." Furthermore, nobody appeared to have copied anyone else's work, since each had arrived at his or her findings in unique ways. Bad news for the professors but great news for opiate buffs

since their work was, in effect, already tested and verified three times over.

But the ivory tower's egos couldn't handle the historic coincidence and the fur began to fly.

In true academic tradition, intense squabbling broke out among these opiate pioneers as to who was "first" with the discovery. Also in true academic tradition was the virtual cutting out of grad student Candace Pert who had discovered the opiate receptor as part of her doctoral thesis. Naturally her boss attempted to claim sole credit for the discovery. Snyder even contrived to beat one of his rivals at a professional symposium by hurriedly publishing his findings before the meeting, knowing full well the other guy had planned to announce his discovery in a lecture there.

Later, Mr. Snyder even attempted to suppress the experiments carried out by his "competition" in an article in a 1977 issue of *Scientific American* entitled "Opiate Receptors and Internal Opiates." In it, Snyder described the search for the opiate receptor in detail, but ignored the others' work. As far as he was concerned, it seemed, he was the one who mattered in the annals of opiate receptor lore.

The Brain's Opium

It is simplistic to view endorphins as merely the brain's version of morphine. For one thing, morphine is not a protein. Morphine fits into opiate receptors like a peptide chain but it is not made from amino acids like endorphins. Besides, as research into the opiate receptor continued, it quickly became apparent there was more than one type of receptor, and morphine didn't necessarily fit them all. There also turned out to be many, many more endorphins where the first one came from. New ones kept turning up. Sometimes endorphins of a specific type were found as part of another, different endorphin. Some were long and some were short. Because endorphins are made up of chains of amino acids called peptides and peptides form proteins, permutations on this theme are legion. Moreover, these chemical "keys," for all their exacting scientific names, seemed to fit into more than one receptor.

But they are all related to the same three "parent" molecules produced in three different places in the brain and nervous system.

So the brain produces a slew of related substances called endorphins, all stemming from three precursor chemicals elaborated and excreted from various parts of the brain and all playing a role in perceptions of pain and mood. The first endorphin to be identified was called enkephalin (from Greek for "inside the head") but when it became apparent it was not the only endorphin it got re-named met-enkephalin. The next was dubbed leu-enkephalin, due to a characteristic amino acid in its chain.

More digging turned up substances far more powerful than these enkephalins (and far more powerful than plain morphine). One was dubbed dynorphin (from Greek again, meaning "power"). Soon, eleven distinct endorphins from three "families" had been described. Chief among these was beta-endorphin, a natural opiate that has been shown to accompany pregnancy in increasing amounts right up until birth is completed. Two days later, it's gone. Unexpectedly, a relationship to pain suppression on behalf of the mother could not be established. Instead, it is now thought that the beta-endorphins so prominent during pregnancy are for the benefit of the fetus.

"It's wild speculation," said the honorable Candace Pert (remember her?) on an episode of *Nova*, "but it's very interesting to think about a fetus floating around with its opiate receptors loaded with endogenous endorphins. A fetus in that position would be sleepy, would be relaxed. Its gastrointestinal motility would be suppressed, would be calm. It wouldn't breathe; we don't want it to breathe when it's in the uterus surrounded by liquid; we want it to breathe when it comes out. It's fascinating... to think about the fetus in this blissful prenatal state medicated by beta-endorphin."

No wonder babies bawl so furiously upon being yanked from the womb. The shock of birth — expelled from this dreamy, dark paradise to smack the cold air in the harsh, bright world — must be horrific! The party is most certainly over for the baby as he hacks fluid from his lungs and draws his first dry breath.

The stolen bliss of pre-natal existence is a compelling explanation for why we naturally seek the "fetal position" when faced with pain or adversity. It is even possible that such a position itself stimulates the production of endorphins. The same is true of physical contact, especially caressing. It could very well be that a cat's contented purr is a result of these endogenous opiates. This kind of chemistry blurs the

line between matter and thought. Feelings are chemical reactions and chemical reactions, in turn, are feelings.

Reality can be — to an extent — understood in terms of chemicals and receptors.

Of course the receptors for these various "brain opiates" also turn out to be more numerous than at first thought. Today we know of at least four separate receptors: the mu-receptor, the delta-receptor, the kappa-receptor and the sigma-receptor. There is no reason to believe this is all of them, and not a lot is known yet about the specific purposes of any receptor. So far, it seems, each receptor (which can be activated by a number of different chemical keys) appears to have certain general functions. For instance the mu-receptor is associated with pain relief (analgesia) whereas the kappa receptor is more likely an influence on a person's "state of mind." Recently it's been suggested that there is more than one mu-receptor.

Why the mu-receptor and analgesia are combined is not readily explainable by orthodox science, nor are the reasons behind some of the receptors' other actions, such as the sigma receptor's relationship to the perception of self and movement. Opium also binds to sigma receptors, which are implicated in the study of mental illness.

Chapter Seven: More Than Just a Passel of Endorphins

So this system of brain opiates and their receptors is far more complex than a simple deadening of a nerve or a lifting of the spirits. Likewise, opium is more than super-aspirin. Because endorphins are better viewed as the group of chemicals they are, they are better compared to opium as a whole than to any single opium derivative. Brains do not excrete just one endorphin at a time and endorphins do not act like just morphine. The range of effects of both endorphins and opium is wide and has yet to be fully comprehended. It may turn out that opium — not a mixture of isolated substances from opium — closely resembles the whole of the brain's endorphin system.

The fundamental roles played by endorphins suggest that these chemicals are essential not only for basic survival, but also play a big part in our perceptions of reality as well as some seemingly unrelated tasks, like prevention of disease.

For instance, the brain's opiates have a demonstrated relationship to the endocrine system. The same precursor molecule that generates endorphin peptides generates hormones manufactured in response to stress. Now we see opiates are active in what we have, till now, regarded as two "different" systems (nervous and endocrine). And it just gets more intriguing. By the late 70s it became clear these hormones and opioid chemicals are not only produced in the same place from the same material, they are produced at the same time. Single chemicals appear to be doing more than one thing. The tasks may be an obvious stimulation of one or another receptor, or a subtler enhancement of the primary action of another chemical messenger.

The recent use of codeine to treat narcolepsy runs completely against most accepted medical understandings of opiates. Previously, this disease has been treated only with very powerful stimulants like dextroamphetamine. Codeine was considered a depressant, more likely to cause than prevent sleep! Opium's alkaloids are obviously more complicated than we thought.

In other words, as a reaction to stress, be it temperature, invading microbes, or an overbearing boss, the body dispatches chemicals. These also activate whatever other measures are being taken to protect the body. It is impossible to tie a single action with a single reaction. If along with pain relief, mood is altered, does this change the way the body allocates its energies? Perhaps analgesia and mood elevation spare resources the body can use to ward off further harm.

Old Junkies Just Get Older

The ramifications of opiates' multi-capabilities are even more amazing given the observation that endorphins might serve as chemical messengers for the immune system, too! The old junky's claim that his opiate use protects him against disease doesn't seem like such a wild claim.

Casual observation of opiate-addicts also supports this theory. One interesting phenomenon can be seen when an opiate addict is suddenly deprived of dope. The symptoms of opiate withdrawal are very predictable and revealing: runny nose, exhaustion, vomiting, fever,

and aching muscles. In other words, the same symptoms as accompany the flu when the body's immune system has been compromised.

While amphetamines, alcohol, or cocaine might slowly (or quickly) destroy a user's body, opium and even most of its semi-synthetic derivatives, including heroin, do not cause tissue or nerve damage. The stereotypical picture of the "hophead" or heroin junky as a sickly, emaciated wretch has to do with his status as a criminal or poor person, not his use of opiates. Even the ugly, collapsed veins of a street junky's arms, legs, neck (or anyplace else!) are caused by the use of dirty needles and the noxious adulterants of illicit drugs, not opiates.

Rich heroin-users, who can afford to shoot either high-quality heroin or pharmaceutical opiates are just as pudgy and pink as their cleanest-living neighbor. And, if they follow sterile procedures when injecting, their veins hold up just fine.

Folks can ingest opium on a daily basis for decades without suffering any physical harm because of it. As long as they continue to eat well and observe normal hygiene, about the worst thing that happens is chronic constipation. Thomas De Quincey, the Victorian author of the famous *Confessions of an English Opium Eater* was addicted to the drug for a half century, dying at the age of 74, still an avid opium-user. And the aged author William S. Burroughs unhesitatingly credits his use of opiates for his longevity and continued health.

The Dapper Pipie

In the early part of this century when opium use was enjoying its last days of popularity in America, opium was considered a status drug. Users used to don silk pajamas and lounge around on large mattresses and feed each other bowls of fruit and candy while they inhaled long lungfuls of opium smoke. Opium was inexpensive and so posed no financial hardship on the partiers. Opium's effects are subtle (first-time, even second and third-time users sometimes claim not to feel anything) and tranquil, so opium parties did not attract police attention or outrage the neighbors. Opium users are far more apt to lie back on some oversize pillows and dream, talking quietly amongst themselves, than to tear the house down or start a fist fight.

Opium smokers prided themselves on their civilized manners, looking down on heroin users as "junkies." Those who lived through this era recall one of the greatest fears of an opium smoker was to be forced into using heroin. As drug enforcement became harsher, bulky, hard-to-smuggle opium lost out to the far more powerful heroin. At the same time the Jewish mobsters who had supplied the opium began to lose out to the Italians who specialized in heroin. And the Italian mobsters were much less likely to be so lenient on pricing.

Opium disappeared in the 1940s and people soon found themselves at the mercy of an expensive drug they had to inject. In their book, *Addicts Who Survived*, authors David Courtwright, Herman Joseph, and Don Des Jarlais interviewed elderly people enrolled in methadone programs, to compile their *Oral History of Narcotic Use in America, 1923-1965*.

Throughout the interviews, these hop-head codgers spoke wistfully of the good old days when opium was abundant and as socially acceptable (or unacceptable) as drinking alcohol. Most continued using opium right up till the 40s when it was almost totally replaced by morphine or heroin. Addicted to opiates, they switched to the semi-synthetics and went from jaunty ladies and gents to pathetic and socially illicit junkies. This quote from a 76-year-old woman (now enrolled in a methadone program) typifies the sharp distinctions made between a heroin-user and an opium smoker:

"There's nothing like a pipie (opium smoker). They kept themselves immaculate — dresses, furs. I had a diamond, black mink coat. I had a mink stole, a Persian stole — whatever fur was, I had it because you wanted to look good. Nobody even knew I was a pipie. When people found out I was a pipie, they couldn't believe it. Instead of a pipie, they said I was a junkie already — which I never was, then. There was a million times difference between heroin and opium users, a million times.

"When I became a junkie, I lost my life."

Chapter Eight: What's In Opium

Opium is the juice or latex produced by the poppy plant known as *Papaver somniferum*. There are lots of varieties of poppy. The *Papaveraceae* family has six genera and within the genus we find six species. *Somniferum* is the "opium poppy" although another poppy, *papaver setigerum*, also contains a goodly amount of morphine. Still another poppy, *papaver bracteatum*, produces the valuable alkaloid thebaine (but no morphine). In fact, nearly all the poppies produce alkaloids, some of which are rarely found outside this group of plants. But opium is the fluid of the opium poppy, *Papaver somniferum*.

Normally this fluid is creamy white but can also be pink or even red. Pink poppy juice is said to be more potent. Pink opium seems to come from the poppy at a certain stage in the plant's development and may very well reflect a distinct chemical composition.

The fresh latex is bitter-tasting and of about the same consistency as fresh blood or a thin glue. It is generally smooth and homogeneous

in texture but some opium I've seen in films and pictures from poppies grown overseas has a lumpy appearance.

When the opium is exposed to air it quickly dries to a brown gum that can be rolled up into balls or shaped into bars or whatever. Each region typically adopts a certain style for its opium; some fashioned their opium into lens-shaped discs, bars, or even in the shape of fish! The opium shipped from India to China in the 19th century came in large chests filled with two and a half pound balls of opium nestled into little compartments.

As mentioned earlier, the discovery of opium's star alkaloid, morphine, led to some radical changes in medicine. But morphine is not the only alkaloid in opium, which is thought to contain at least 30 chemicals, three of which — morphine, codeine, and thebaine — are considered to be the most important. Of them, morphine seems the most "powerful" ingredient in opium. Although it comprises only about 10 percent of the weight of opium, it is at least ten times stronger in many of its effects than opium by weight.

After isolation in 1803 by the German druggist Sertürner, morphine soon became the standard by which opium and eventually all other pain-killers were measured. Today morphine remains the standard of analgesia. Thus we say that Dilaudid is 7-10 times as effective as morphine because it takes only a seventh or tenth as much to produce the same effects. Sertürner's discovery is important largely because it gives us a means to calibrate analgesia; because the strength of opium can vary so widely (morphine content can be as little as 5 percent or as much as 19 percent!) one of its drawbacks was a real difficulty in precise dosing.

Morphine quickly usurped opium's place as a medicine. By the mid 1800s morphine was being used in thousands of different medicines and used to treat almost any illness. The introduction of the hypodermic syringe made even "stronger" effects possible as direct injection into the bloodstream bypassed the liver where much of the morphine is metabolized into other products.

Experiments with the yellowish powdered alkaloid led to the invention of heroin — made by a fairly simple process of acetylation of morphine. Although first discovered in 1874 at St. Mary's hospital in London, England, heroin was seriously developed by chemists at the Bayer company in Germany, the same chemists who invented aspirin.

Heroin was seen mostly as a cough remedy in the beginning and heroin cough lozenges were big sellers.

The Constituents of Opium

Nearly 40 alkaloids have been discovered in opium since morphine was first isolated in 1803. These alkaloids fall into two chemical groups, namely the phenanthrenes and the benzyloquinolines. It is believed that only the phenanthrene group contains alkaloids which are addictive or lend themselves to synthesis of powerful drugs.

Phenanthrenes

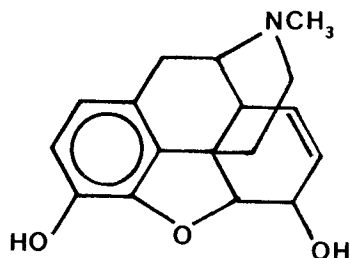
Apocodeine
Apemorphine
Codeine
Codeinones
Desoxycodines
Hydroxycodines
Methylmorphimethines
Morphine
Morphinols
Morphol
Morphothebaine
Neopine
Phenylidihydrothebaine
Pseudomorphine
Pseudothebaine
Thebaine
Thebainone
Thicodides

Benzyloquinolines

Codamine
Cotarnine
Cryptomine
Gnoscopine
Hydrocotarmine
Lanthopine
Laudanidine (L-Laudanine)
Laudanise
Laudanosine
Meconidine
Narceine
Noscapine (Narcotine)
Oxycarcotine
Papavermine
Papaverine
Protopine
Rhoeadine
Tarconine
Tritopine
Zanthaline (Papaveraldine)

Figure 8-1

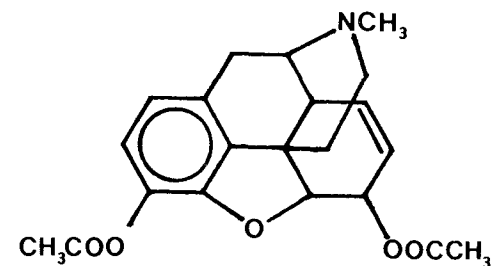
The Constituents of Opium. Nearly 40 alkaloids have been discovered in opium since morphine was first isolated in 1803. These alkaloids fall into two chemical groups, namely the "phenanthrenes" and the "benzyloquinolines." It is believed that only the phenanthrene group contains alkaloids which are addictive or lend themselves to synthesis of powerful drugs.

**Figure 8-2***The morphine molecule.*

Heroin was the first of a long line of semisynthetic opiates derived by screwing around with the morphine molecule. More semisynthetics have been derived from codeine and thebaine. Thebaine presents us with an interesting phenomenon. Although by itself it has no narcotic properties (if anything it is a stimulant) it has served as the basis for hundreds of chemicals known as Bentley Compounds. One of these is etorphine, which is perhaps 1,000 to 3,000 times more powerful than morphine. As a drug, a therapeutic dose of etorphine is measured in micrograms and is by weight the strongest drug in the world, stronger even than LSD-25.

Another component of opium, papaverine, has a rather interesting use: when injected into the base of a penis, it causes an erection! This treatment has obvious benefits for men suffering from impotence.

The mysteries of etorphine or papaverine, along with the actions of endorphins, clearly suggest that opium is much more than just a source of morphine. At the very least opium must be considered more than a drug used to kill pain or keep Chinese coolies happy while pulling rickshaws.

**Figure 8-3***The heroin molecule.*

Morphine and Science

Morphine remains the cornerstone of opiate science. The analgesic effects of codeine are thought to come from the morphine the liver metabolizes from codeine. Heroin, in fact, turns out to be just a variation on the morphine molecule, which allows the drug to deliver morphine in far larger quantities to the brain than is naturally possible. Within 15 minutes of a dose of heroin, all of it has been converted to morphine and morphine metabolites. In fact, one of the drawbacks to both morphine and heroin are their very short periods of action — no more than six hours and usually far less. This means a user needs to take a dose of morphine several times a day, whether to control pain or to maintain an addiction.

So heroin is just as fast acting as morphine but packs a much larger punch. It is at least three times as potent as morphine.

Other Opiates

Hydromorphone — This is the famous Dilaudid, as much as ten times stronger than morphine and, like heroin, derived from the morphine molecule. Although this is the drug that killed one of our heroes in the movie *Drugstore Cowboy*, it is not usually associated with death. Notice the word "laudanum" hiding in the name Dilaudid?

Meperidine — Otherwise known as Demerol, this is a very popular pre-op drug and is often used in place of codeine for pain relief in hospitals. Invented by the Germans in 1939, it was the first totally synthetic opiate and has only one sixth the strength of morphine. Unlike morphine, however, this stuff is neurotoxic and overdoses can easily kill or permanently damage you. It also doesn't feel as good as natural opiates and is jeered at by junkies as "Dummy Oil." Analogs of meperidine developed by street chemists have proven dangerous, causing instant and permanent Parkinson's disease in some users.

Fentanyl — This drug is in the same class as meperidine but is at least 50 times more potent than morphine so it is quite effective at relieving pain. It also has the advantage of being absorbable through the skin, and transdermal patches containing fentanyl are often used for as much as three days' analgesia.

One problem with fentanyl occurs on the street where it is sometimes mixed into heroin by unknowledgeable dealers to beef up a weak product. It doesn't take more than a speck or two to make the resulting product lethal and hundreds of heroin addicts have been killed by it. Fentanyl-containing heroin is sometimes called "China White" and erroneously referred to in news stories as a kind of super heroin.

Hydrocodone — This is the schedule III drug widely used in cough syrups and pain killers, for moderate to severe pain. Its chemical structure is very similar to codeine. One interesting feature of hydrocodone is that it is eliminated from the system in the form of hydromorphone (see Dilaudid).

Oxycodone — This is the stuff in Tylox, Percocet, and Percodan. Oxycodone seems to be a popular pill among the Hollywood set who are forever getting addicted to it, blaming their personal problems on it, then kicking at swank recovery farms. It is made from thebaine. Quite powerful.

Pentazocine — This is an interesting synthetic opiate that was once gleefully abused almost exclusively by health-care professionals. Mixed with an antihistamine called tripeleminamine, the combo was known as "Ts and Blues" and said to be a lot like heroin in effect. As a pain-killer it's only half as strong as morphine and some of its reformulations now include a narcotic antagonist to prevent users from getting off on it.

Loperamide — This is the stuff in Imodium AD and it's not supposed to get you high, although some people feel a mild euphoria from it. It is structurally similar to both fentanyl and meperidine. I include it here because it functions as a kind of poor man's methadone. In larger than normal doses, this stuff can halt opiate withdrawal symptoms. It has been proven to stop withdrawal symptoms in morphine-dependent monkeys. In humans it does the same thing and could be used by street junkies as an OTC alternative to government supplied and government monitored methadone. It's cheaper, too.

The liquid form of loperamide is absorbed better and faster than the pill form and both have a half-life of almost 11 hours.

Methadone — Now this is an interesting synthetic. It's an ingenious creation of chemistry, and because of its use as a government approved heroin substitute, it is surrounded by all kinds of cultural baggage, including the yarn that it was once named after Adolf Hitler. Today it is used for maintaining junkies so they'll stay away from heroin. It has also been used as a pain killer for cancer patients because, unlike morphine, it is a long-lasting analgesic. Its half-life can be as much as 50 hours! Another compound related to methadone, called levo-alpha-acetylmethadol (LAAM) is even longer lasting. LAAM's effects go on for anywhere from 48 to 72 hours.

Methadone was invented by the Germans during the second world war as a replacement for morphine when supplies of opium from Turkey were interrupted.

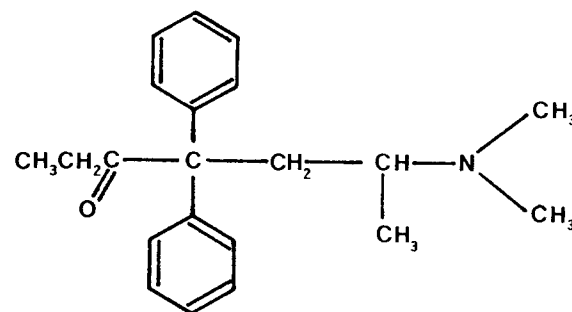


Figure 8-4
The methadone molecule.

The Adolf Hitler legend comes from the fact that the drug was called Dolophine. Some people have leaped to the conclusion that this was in honor of Adolf Hitler (Dolophine coming from a contraction of "Adolfaphine" or something like that). But the name seems to have been coined much later by the American drug firm Eli Lilly, which probably derived it from the Latin "dolor" for pain.

How Methadone Got To America

After the war a team of American scientists were rooting around in the laboratories of I.G. Farben in Elberfeld, Germany, systematically cataloging and describing whatever they found. One of the things they found was Analgesic #10820, or Amidone. When the team's civilian leader, Dr. Irvin C. Kleiderer, got back stateside he quickly went to work for Eli Lilly Co., the pharmaceutical firm in Indianapolis, Indiana. Soon Lilly was producing the new drug, calling it Dolophine. It is not known just how this American company obtained the rights to the drug but Lilly remains a major producer of methadone today.

Methadone has the property of being a narcotic antagonist, which means it quickly locks into opiate receptors where it produces little stimulation and also prevents any other substances — such as heroin — from working. That way it relieves the pain of opiate withdrawal without producing much of a high. This effect, coupled with its long half-life means drug abusers can take methadone just once a day and go about their business without discomfort and without getting high.

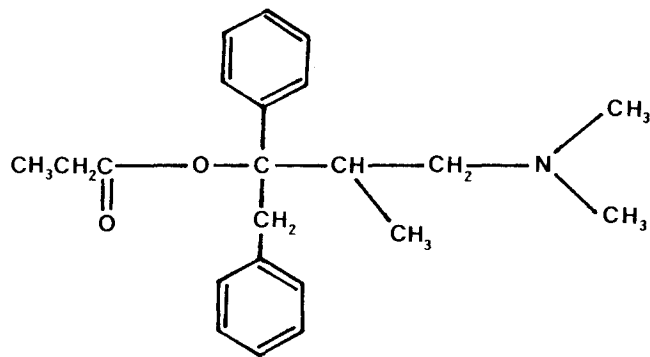


Figure 8-5

The propoxyphene molecule.

Propoxyphene — From methadone, Lilly developed a highly successful synthetic opiate called propoxyphene, the active ingredient in Darvon and Darvocet. Both of these pills have been fantastically popular pain-relievers although they supposedly have no more analgesic power than aspirin. However, probably because of its pleasurable opiate side effects it is perceived as being much stronger. Patients clearly prefer it to plain aspirin. Like methadone, Darvocet serves as a narcotic antagonist and has been used to maintain junkies just like methadone.

Chapter Nine: Your Very Own Opium

Maybe The Coolest Thing About Opium

Although it is one of the most "illegal" drugs in the U.S. it is one of the easiest to get and the cheapest, too. No one knows how much opium is illegally imported into the U.S. each year and it's not an item that gets much press. Customs rarely catches anyone with opium and when they do, it is usually in small amounts for personal use. Whether that's because it is simply too bulky for the risk/profit formula or because nobody gets caught is unknown. Recently the son of the former Shah of Iran was busted in L.A. with a kilo of the stuff, though. Most people don't know a lot about opium and opium poppies. Even police and botanists are surprisingly ignorant about opium. It is a mystery to them — even when it's right in front of their noses!

But you don't need to smuggle opium. It's not even necessary to grow it yourself, as ample supplies are grown on legal farms in the

U.S. and poppy plants are legally and even massively imported from Turkey and other countries. This happens perhaps because of this widespread ignorance and misinformation about opium. Very potent, low cost opium is available in virtually every town in the country. It is entirely possible that it is carried by your local grocer. It's even possible that you could walk into a grocery store and come out with all the ingredients and tools you need to make your own morphine and perhaps even heroin if you're clever.

But this is a book about opium, so here's where to get it.

All Opium Comes From Poppies

Opium poppies are very available to the general public, commonly sold in craft stores and flower shops as bunches of dried heads. Normally these are used in floral decorations but they are still chock full of opium. Although the potency of the opium is slightly reduced by drying, it remains plenty strong and it can be quickly extracted by making tea from the poppies.

The average price of dried poppies is between five and eight dollars a bunch, but the price has been steadily rising in recent years. It's not uncommon to pay \$12 or more for a single, cellophane-wrapped bunch. It's still worth it. Don't worry too much about getting "the wrong ones" since these are the only dried poppy heads sold like this. You should get a good 15 or 20 heads in a bunch, the heads ranging in size from about as big as a marble to bigger than a golf ball. The average head size should be approximately the size of a small walnut.

It is possible that you will run into a small-headed variety of dried poppy. This, too, appears to be *Papaver somniferum* but they are not very potent for some reason. Still, you can experiment with them. You may also find some dried poppies with medium-sized heads surrounded by a thick ring of immature seed pods that look like a sort of mane. These poppies are known as "hens and chicks" and are very potent indeed. Three of these heads are as strong as ten of the regular ones.

You can be even more sure you've got opium poppies if you see a label indicating the plants were grown in Holland or Turkey.

If the pods have been picked before the portals opened up, all the seeds will remain inside. You can test this by shaking the pod and listening for the rustling seeds. They're like miniature maracas and in fact can be used as baby rattles. There's also a good chance the seeds are viable, so make sure to save them! They can also be used for cooking, like any other poppy seed.

For instructions on making opium tea, please skip ahead to Chapter Ten. After you've followed the instructions and are nice and stoned, make another mug of hot tea and come back and read about your new friend, the poppy.

Opium Extraction

It was thought for a long time that the best way to extract opium from poppy pods was through the labor-intensive process of carefully slitting each pod, allowing the juice to exude and harden and then painstakingly collecting it later with a simple scraping tool. This is the way it has been done for thousands of years and is still the way it is done all over the world today. But the old way has some problems in the modern world.

Slicing the pods also allows for "diversion" of opium when impoverished peasants keep some of the opium and sell it for themselves. The United States has been adamant that opium-producing countries find ways to stop opium diversion, hoping that limited opium supply will mean less heroin on American soil. Turkey, once a major source of heroin, came under special pressure in the late sixties to do something about poppies in the hands of heroin-makers.

So to satisfy the U.S. government and thwart pilfering in the poppy fields of Turkey, the Turkish government set up elaborate safeguards to ensure that the peasants wouldn't dare slit a poppy pod. First, the number of opium-producing provinces was reduced from 42 out of 67 in 1940 to just 7 in 1970. In 1971 all poppy cultivation was banned while the government constructed an enormous state of the art alkaloid processing plant in Bolvadin to extract the opium and refine it into various medicines.

Poppies were back again in 1974 and now the government even encouraged poppy production through price supports. To cut down on

"pilfering," peasants are made to let the poppy heads dry in the field, harvesting by snapping the whole heads off the plant. To make extra sure there is no hanky panky, armed guards supervise the work. The peasants are allowed to cut each head horizontally and shake out the seeds, then they must bring the empty heads to the factory. High, but not exorbitant prices are paid. At times the Turkish government has had surplus poppies more than ten years old. This gives an idea of how long dried poppies can "keep."

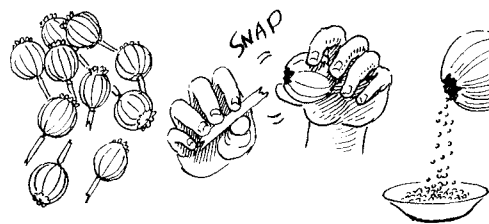
Once the international quota has been reached, some of the surplus poppies are sold off and distributed as floral decorations around the world. You don't have to go to a Laotian opium den to get opium — it's available at K-Mart! Removing it is easy. Becoming your own opium farmer is easy, too!

Chapter Ten: Making Poppy Tea

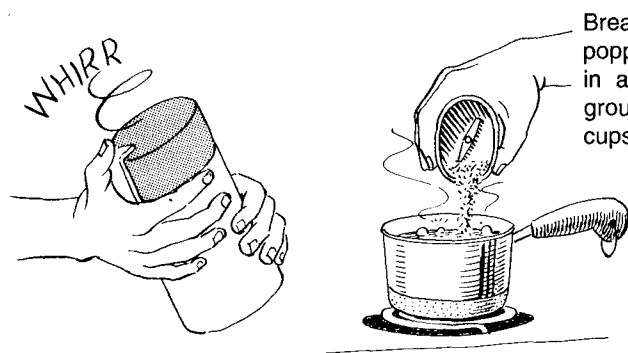
Poppy head tea has been a favorite in Europe for many hundreds of years and is still a typical home remedy today. In Europe it's not illegal to make it; in America it is unclear whether it is illegal to brew tea from poppies you've purchased legally from the store.

The first step is to remove about ten heads from their stems and set them aside. This should be enough for one person. By weight it comes out to approximately ten grams, so if you've got a good enough scale and aren't sure how much is enough, you can measure it that way.

The next step is to snap off the remainder of the stem from the bottom of the poppy head in such a way as to create a hole there. With a little practice you'll see all it takes is a slight twist as you break off the stem stump. You do this only if there are seeds inside the head (listen for them rattling when you shake the head). Poppy seeds are not an especially good source of opium and can be put to far better uses than making tea. Hint: be a Johnny Poppyseed and beautify the countryside!



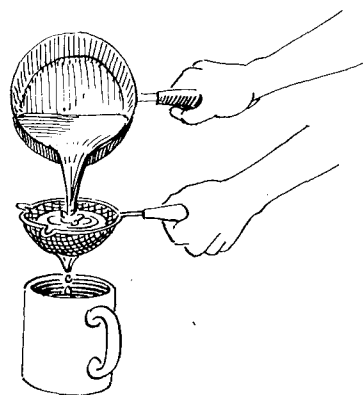
Gather about ten poppy heads. Snap off stems and pour out seeds. Save the seeds for planting.



Break apart empty poppy heads and grind in a coffee mill. Pour ground heads into two cups boiling water.



Immediately remove pan from heat and let cool for five to ten minutes, stirring occasionally.



Pour contents of pan through a wire mesh strainer. Press on the pulp to remove all the tea. Save the pulp for another run through.

Figure 10-1
How to make poppy tea.

Now simply pour the seeds out of the pod into a bowl. You may be astonished at how many seeds are in there. It's not uncommon for a single poppy head to contain a thousand seeds or more! You should be able to collect enough seeds from a single bunch of poppies to ensure poppy crops for the rest of your life.

There are basically two kinds of seeds. There are the black (or grey) ones you know from poppy seed cake and there are red seeds you may have never seen before. These red seeds are also used as food — usually pressed for their light but tasty oil. It is said that poppy seed oil is a very fine and highly prized cooking oil in Turkey.

You may also find smaller, lighter colored seeds in shades of brown or tan. These are seeds that failed to mature, probably because the pod wasn't old enough when it was harvested. Keep them, too.

Now take your empty pods and break them with your thumb and fingers as you drop them into a coffee or spice grinder. It is important to use the best grinder you can since the pods should be ground as finely as possible to expose maximum surface area. Grinding to a powder is ideal. Opium is pretty water-soluble but it is much harder to get it out of bigger chunks of dried poppy. A blender on its highest setting is also good enough. In fact one way to make tea is to pour boiling water into the blender with the crushed pods and let it blend for a minute or two before straining.

You can do it that way (using about two cups of water) or you can add the poppy powder to two cups of boiling water in a pot. Immediately remove the pot from the heat and stir the poppies into the brew. An egg beater is an ideal tool for this. As with the blender, swirl the stuff around for a minute or so.

It's important that you scald and not boil the poppy pods. Although it doesn't matter if the water boils for a few seconds, it's not a good idea to let it go on for too long, as the heat will begin to break down the opium.

By now the majority of the opium has been extracted into the water, but it can't hurt to let it sit for a few minutes while it cools. Some people swear by a long steep but I'm not sure how much stronger it is. Just make sure not to let the tea cook for a long time and risk destroying the opium. Let it cool.

Next, whether you've made the tea in a blender or in a pot you've got to pour it through a wire mesh strainer. The kind sold in most gro-

cery stores is usually the right kind. The mesh shouldn't be so big that it lets the poppy mash get through nor so fine that it gets clogged up. Some glop showing up at the bottom of your mug is to be expected and, since it contains opium, you may as well swallow it too.

Good to the last drop!



Figure 10-2
Good to the last drop!

After you've poured it through the strainer, make sure you mash it down with the bottom of a tumbler or a large spoon to squeeze out all the liquid. The mash can be used again with varying degrees of success and is good for at least one more time. To make the most of your poppies, it's a good idea to make another batch as soon as the first one is finished. For the second cooking, just use half as much water and the wet grounds. This tea will be weaker but still effective.

Be sure to save your stems! They can be ground up and made into tea that's just as potent, though you may have to use two or three times as much powdered stem as head for the same amount of tea.

Save the leaves, too! Strip any leaves off the stems by running them through your fingers — they should be pretty brittle — and save them for smoking. It's also possible to smoke the ground up heads or stems but it's probably not the best use of the plant. The leaves, however, can be broken up and smoked either in a joint or from a pipe. Poppy smoke is thick and acrid, so you may want to run it through a

water pipe. The effects are much quicker than with the tea but not as long lasting.

The roots of the poppy contain opium, too, but don't normally come in bunches from the florist. If you grow plants, make sure to give the roots plenty of time to dry. The thick, fibrous roots can be difficult to cut when fresh.

If you are using fresh poppies (often on sale as cut flowers from florists) you'll find it's not necessary to use hot water and the resulting mixture will be bright green. But hot water dissolves more opium than cool. Also, fresh poppies are more potent than dried and you need only about two thirds as many heads to get high.

Making Opium From Poppy Tea

Once you've made opium tea, it's a cinch to make plain old opium by letting the water evaporate off. You can do this best in a glass brownie or casserole dish, letting a small fan play over the surface to speed the process. Alternatively, a crockpot type slow-cooker can be used. Just make sure the temperature of the liquid doesn't exceed 70 degrees centigrade (158 degrees fahrenheit). A day or so later you'll be left with a watery sludge you'll need to sort of marshal to one corner and continue drying. In this way you'll be able to collect the opium, which can be very sticky.

After it dries a little more you can roll the opium into pea-sized balls and pretend you're in Victorian England or fashion it into festive shapes. Encase the pills in gold leaf and pretend you are a Turkish sultan. You can also use this opium to make laudanum or any of a bunch of concoctions described below. You can also smoke it. This is opium as it has been handled for centuries. A hundred years ago opium traders separated opium into two qualities. Good quality opium contained 10% morphine, while low quality contained less. This lesser quality opium was normally sold as "smoking opium."

The quality of tea-opium also depends on the amount of plant material in it. Too much poppy head residue and the opium will be light brown, dry, and flaky. Ideally the opium will be dark, dark brown and very sticky. It is bitter and has a licorice-like taste. This can either be chewed before swallowing or even dissolved under the tongue. Some

people really hate the taste however (some people hate licorice). To avoid flaky opium, filter the tea more thoroughly before evaporating. Coffee filters, silk, or cheese cloth can be used.

Chapter Eleven: Poppy Cultivation

The best way to ensure a good supply of opium is to grow your own opium poppies. With fresh poppies you have the opportunity to harvest pure, fresh opium directly from the pod. You can even coax opium poppies into producing more opium than otherwise, by "milking" them, incising a head twice or more over time.

And you still have heads and straw for making tea.

Once again, as with so many things about opium and opium poppies, there is a lot of misinformation being passed around. Let's see if we can set things straight. A lot of what is known about poppy cultivation comes to us from British documents of the 19th century, back when the Empire was growing so much of it for export to China. Research into poppy cultivation essentially came to an end soon after the 20th century began.

These documents are still the best source of information. Even better are British documents concerning domestic production of

opium. This information concerns situations more closely resembling climatic conditions in America.

What's The Best Poppy?

Why is There Opium?



Figure 11-1

The Opium Poppy, Papaver somniferum.

As mentioned before, the only poppies that produce latex with appreciable amounts of morphine are the *Papaver somniferum* and a wild poppy called *Papaver setigerum*. Seeds for this second kind of

plant are available but its opium is weaker and it is not extensively cultivated. Still, if you get ahold of some seeds, it would be fun to grow some, especially if you were to cross-breed them with *somniferum* to create an opium-producing hybrid! Other plants called poppies may or may not be true poppies, like the California poppy (*Escholtzia californica*), which isn't a true poppy at all. These plants don't have opium in them, even though they probably contain some interesting chemicals.

Inside the Plant

Because opium is produced in the roots of the poppy and brought through the stem to the capsule, opium is present throughout the poppy plant, even in the leaves. But it is most concentrated in the seed capsule. Although most of the opium in the world is collected by slicing the capsules and gathering the opium that runs out, it is possible to extract opium from any part of the plant, even the seeds. Poppy seeds do contain morphine in amounts varying from 7 micrograms to 60 micrograms per gram. The seeds contain codeine, too. This is a low-potency source for opium but it is strong enough to be used medicinally in small animals and it's why the urine of people who eat poppy seeds tests positive for opiates.

It also means it's theoretically possible to extract opium from poppy seeds bought at your local grocery store. Even if the seeds are old or have been sterilized, the morphine remains. In fact, other items available at the grocery store make it possible to not only extract morphine but to purify and strengthen it!

The strength and amount of the opium produced by your poppies depends mostly on genetics. Sunlight and soil composition are also important factors but not decisive in and of themselves. Other factors such as altitude and wind figure into the make-up of a plant's opium.

The main thing is to make sure the plants have enough nutrients in the form of fertilizer and plenty of sunlight. Poppies, like other plants, tend to deplete the soil so it's good to practice crop rotation or use fertilizer if you want to grow them year after year. Any kind of manure is a good fertilizer but some of the best organic fertilizers are different

types of bird manure. It is of the right pH, and contains phosphorus, which poppies need.

The exact role of opium in the poppy plant is not understood. All plants have juice or sap that carries nutrients around the plant, but why this particular poppy should produce opium is a matter of speculation.

Some think opium is so useful, so uncannily like chemicals needed by the brain, that the poppy is a divine gift to mankind. Maybe so, but if conventional evolutionary theory is correct then the sap should be of benefit to the poppy, too. There must be a reason the poppy contains opium and not some other sap. How is this substance of advantage to the plant?

Opium most probably serves mainly as a deterrent to predators. In fact, many varieties of poppy are avoided by animals. The alkaloids in the opium (such as morphine) are bitter tasting and poisonous to small animals. They certainly aren't sweet. Any animal looking for sugar would quickly deem the poppy a bad choice. At the same time the alkaloids are potent enough to serve as an effective insect repellent if not insecticide. Poppies are very resistant to bugs and it's only after they have matured and sent their seed on their way that the opium begins to dry and aphids (their chief insect foe) or other insects begin to feed on them.

It is also curious that those plants that are attacked by insects seem to be singled out, while the rest are left alone. Perhaps you'll find that only one head in a patch containing 50 or more heads will succumb to insects. In this case, don't collect seeds from that head.

Birds, too, love poppy seeds but don't normally try to eat them while they're still in the pod. Those that do, have long thin beaks, which pierce the opium-filled wall surrounding the seed chambers and are not affected by the opium.

There remains a lot of work to be done on poppies and the scanty information available on them is not comparable to the voluminous and precise data accumulated on other drug-plants.

Color

Some say the color of a poppy's bloom reveals the presence or strength of the flower's opium. It does not but the legend persists. Even DEA agents looking for poppies have been quoted in the mainstream press as scouting out the "characteristic red opium poppy." Lots of opium poppies are red but they can also be white, blue, pink, purple or shades in between. The color of the petals makes no difference in the opium. Opium poppies are sometimes described in old herbals as "White Poppies."

Soil, Temperature, Climate

Poppies can grow in almost any soil and even do well in slightly sandy or rocky places. Generally, poppies do well in loose, loamy soil and don't grow easily in clay or other dense soils. But any soil can be modified to accommodate poppies. It has been said that poppies are like weeds because they grow so easily. That's not exactly true, but poppies do tend to thrive even in bad conditions and poppies grow in almost any climate.

It is often said that poppies require very specific climates to thrive and even knowledgeable botanists have flatly declared that the opium poppy is a tropical plant and will not grow where it gets cold. A recent article in *Details* magazine asserted that poppies require an elevation of at least 3,000 feet. Neither one of these things is true.

Some of the confusion about where poppies will grow may have to do with the temperatures poppies like. Poppies do best where it is cool. The seedlings, especially, thrive in temperatures in the high forties and the seeds sprout when it's only a few degrees above freezing. In tropical areas, where the sun is always strong, poppies are normally grown high in the mountains where it stays cool. This is probably why poppies do so well along the coast in the Pacific Northwest, too, where the elevation is low, but the temperatures are cool despite long days in the spring and summer.

Still, poppies grow anywhere.

Poppies have been produced all over the United States. Opium crops were a source of revenue for early American farmers in

Pennsylvania, Vermont, New Hampshire and Massachusetts. By the 1870s farms in Florida, Louisiana, California, and Arizona were reporting yields as high as 120 pounds of opium per acre! During the Civil War, the South got opium from farms in Virginia, Tennessee, South Carolina, and Georgia.

It should be noted that all this opium cultivation was taking place during a time when the annual per capita consumption of *imported* opium was already 52 grains (3.4 mgs) per person — enough to supply everybody with a hefty weekly dose. Apparently there was more demand than could be met by the fields of India and China, and America was on the verge of becoming an opium-producing nation itself.

The cultivation of opium poppies was banned in 1942, by the Opium Poppy Control Act but the opium poppy had already established itself very firmly all over the country. Opium poppies grow wild in urban Seattle. They grow wild in frigid, windswept Iowa. Poppies are everywhere! And poppies grown for ornamental purposes are legal... but might cause you trouble anyway.

Recent DEA actions indicate growing ornamental poppies is not so illegal that they will arrest you, but in areas of the Pacific Northwest, DEA agents are known to cruise older neighborhoods looking for the flowers and then asking the owners to destroy them. In 1992 a DEA man vacationing in Idaho made a pest of himself in one small town by tromping into at least two people's gardens and ripping up all the poppies he saw there.

When the shocked residents noticed a man destroying their gardens, they called the police who came to investigate. The DEA agent's antics did not endear him or the federal government to either the local cops or the town's residents.

But normally, poppies are grown for ornamental purposes, and gardens in many older sections of American cities have proven to be good sources of poppies.

Poppy crops are also most certainly being grown in a number of states (notably in southern Oregon), some of them perhaps under the auspices of the U.S. government, which has at times experimented with domestic production of opium.

About the Plant

As mentioned above, the flower of the poppy, about 4 to 6 inches in diameter, can be any one of many colors. The petals are very thin, almost translucent, and delicate. Poppies sometimes look as if they were made of crepe paper. The petals may also be "doubles" and such flowers look a lot like carnations. Make sure to keep seeds from every poppy you can, so you can experiment with hybrids or invent your own. You can do this for fun, or to disguise the plant so it won't be recognized.

The plant itself sends up one main stem, which branches into several, thinner stems sort of like a candelabra. It is at the end of each of these stems that the plant forms a bulb, which is normally pointed downward as if the flower were hanging its head. To multiply the number of heads per plant, pinch off the first bud that forms. This causes the plant to produce a number of new shoots, each with a seed head. A poppy plant normally produces between three and five heads.

The leaves of the poppy are a kind of dusty green called glaucous and the edges are softly serrated. From a distance, young poppy plants look a lot like dandelions.

As each pod matures, it splits and rises up, eventually spreading out into the flower with a small seed head in the middle. At this time the head may be no bigger than the eraser on the end of a pencil but it will have the distinctive crown.

The flowers typically don't last too long, a couple of weeks at most, before the petals fall off. Some poppies bloom for only a few days before they start dropping their petals. Although the petals aren't too fragrant, it's still possible to make perfume from them, and in the old days, they were used to wrap balls of opium — looking like red paper and even tinting the opium a bit.

Now the head begins to grow in earnest. Some say they are "ripe" ten days after the petals fall off, but this is not a hard and fast rule and it can be as long as three weeks. Inside, the head is divided into eight to twelve vertical, crescent-shaped seed chambers. At first these seeds are soft, white beads that gradually ripen inside the head. This ripening can even occur inside poppy heads that have been severed from the plant and refrigerated! As the seeds ripen and dry, the head grows.

At this stage the poppy doesn't need any more water and the opium it produces will be more concentrated and potent if the plant stays dry. In fact, heavy rains during this time can leach the alkaloids out of the plant and weaken the opium. Poppies are also susceptible to rot should the ground become waterlogged. For this reason, it's best to plant poppies on a 20 to 40 degree slope for good drainage.

Once the head reaches maximum size, tiny portals to the seed chambers open up just beneath the crown and the wind begins to draw the dried poppy seeds from inside. Outside the capsule, the seeds are either carried by the wind or upon water, or are even carried away by ants!

Red, blue or black, poppy seeds are very small, and look like tiny specks to the naked eye. But take a magnifying glass to them and you'll see the seeds are kidney-shaped, slightly elongated and pitted with regular indentations forming a pattern over the skin of the seed. Under stronger magnification (50X) the skin of the seed looks like a peanut's!

How to Plant

Planting is done by "throwing" or broadcasting. That means you just toss them out over moist soil and let them fall where they may. The seeds are so small they just disappear into the dirt, and even those left on top of the soil will sprout. Some suggest covering the seeds with a light coat of soil after planting and this would be a good idea if you live in a cold climate, as the coating of soil will provide insulation against early frost. For planting large areas, use one of those grass seed broadcasting gizmos designed to plant lawns.

To ensure that the seeds drop into the dirt, and to give the plants room to grow, the soil should be deeply plowed. With deeply plowed soil, it's possible to sow poppies two or three times in a single row, covering slightly between sowings, as was the old practice in India. This method produces maximum yield per square foot, but planting must be done carefully and evenly to avoid "thick spots" where the poppy sprouts seem to cause the ground to erupt with poppy shoots, which then strangle each other out. Mix the seed with sand — about a

1 part seed to 3 parts sand mix is good. This is a good idea anyway — since poppy seeds are so small, it's hard to throw them evenly.

One rule of thumb is to use one pound of poppy seeds per acre of land.

The flower likes slightly acidic soil (another reason to use bird droppings for fertilizer), which you don't have to prepare very much. It's not strictly necessary to plow or turn the soil before planting (although it would help) and poppies will even grow well in soil that already has grass growing in it.

It's not necessary and not even advisable to sprout the seeds in between wet paper towels as with some plants. Poppy seedlings have very fragile, hairlike roots and you're sure to ruin them if you try to handle them. Plant them where you want to grow them.

The soil should be thoroughly watered and allowed to dry a bit before planting. After planting, keep the soil moist, but not wet. If the ground is too wet, the young plants are prone to attack by fungus or rot. Bacterial blight, too, can happen and plants that show signs of this (blackened areas) should be culled, although applications of fungicide have been shown to be helpful.

The seeds sprout within a week or two. Misting or sprinkling the sprouts is a fine way to water them and you should give them a little every day, sort of like a heavy dew. Once the flowers appear, however, you should stop watering the plants altogether.

Poppies are ancient plants and although delicate at first, are pretty hardy. You should find nearly every seed you plant will sprout. That means you may need to thin them out so that each plant has a few inches room between it and the next one. Regarding how much room is necessary, there is a difference of opinion, ranging from a distance of six inches to two feet between plants. To a large extent, this depends on how big the plants grow to be. The bigger they grow, the more space they'll need. Plants growing only two or three feet tall can do with just six inches of spacing. Monster plants over six feet tall need much more. Since most plants in North America grow to a height of only three to five feet, a foot should be about right. But as many as 18 plants can be grown in a square foot!

When planting a large area, it's less important that the poppies have room than to allow some space for a human to get in to tend the plants.

There are at least two times you can plant poppies, in the fall and in the spring. If planted when it's cold outside, you may find they don't sprout right away and that's fine. If they do sprout, some of the plants may be killed by the winter's cold but not all. Even poppies that seem dead from a frost have a chance of coming back once it warms up. Opium poppies have been successfully sown in England as late as December.



Figure 11-2

A huge field of Turkish poppies stretching out to the horizon.
(Photo courtesy of Michael Starks.)

The plants grow slowly or stop growth during the cold and begin to grow at the end of winter where the combination of cold, moist ground and lengthening days is perfect for them. If you haven't planted in the fall, then do so as early in the spring as possible. It's been said that the best place to plant poppies is at the edge of melting

snow, so this should give you an idea of both the soil temperature and moisture level poppies like.

Poppies do have enemies besides rot. One danger comes just after planting when birds arrive to feast on the nutritious seeds. Still, even with birds eating them, there always seem to be enough seeds that escape and you'll still have a crop.

As seedlings, poppies are also favorites of cutworms, which can be thwarted by placing a metal collar around the plant (you can make these out of soft drink cans). Just sink the collar about an inch into the ground and leave about that much above it, and that should be adequate.

Rabbits, too, love the succulent little poppies, so try to keep the critters away from the plants until they sprout their secondary leaves.

High winds or hard rains can tear up poppies, too, so if possible, keep them protected by planting them near some sort of wind-break. Right up next to the house is one idea. Another method, used in Southeast Asia, is to plant poppies on ground where corn has already been harvested and the stalks left standing. The stalks act as protectors for the small plants without blocking the sun.

After the plant gets a running start there's not much for you to do. Of course, keeping them watered and fortifying the soil can only help and the poppy will produce better and more opium if you use a little fertilizer and make sure they get enough sun. You can also mix the crop (as in merry ole England) with rhubarb, potatoes, turnips, or whatever else will make room for the poppy plant. Other than that, you can ignore them.

Indoors

Indoors, poppies can be planted in potting soil just as you would outside. Just remember to plant them in the container you mean for them to stay in (or else use peat cups) as transplanting poppies is never easy. Even older plants can be damaged by it.

Happily, the poppy does not have very deep roots at all and a five foot plant with 20 heads and a stem three quarters of an inch thick may have a root only a few inches deep. Plus, a poppy's root tends to grow downward for a bit, then grow horizontally, making it even eas-

er to grow in shallow soil. Pots eight or ten inches deep are probably sufficient, but bigger is better.

Lighting for your poppies is the same as for any other plant. Any sort of grow light will do. Even cheap, incandescent bulbs are just fine. Bluish light seems to be best for normal growth, while red brings on flowering. The greatest difficulty posed by indoor poppy-growing is the problem of too much heat. Remember, poppies like cool temperatures and lots of light, a combination that's hard to get with incandescent bulbs. The best lighting for poppies would be the most powerful metal halide lamps available. A 1,000 watt halide lamp with an appropriate shield should provide adequate light for 10-12 square feet of growing.

The most important thing about lighting for poppies is that it approximate its growing season. Poppies bloom in the summer, so try to start out with a shorter day (12-14 hours) and gradually add to that as time goes on. For flowering, keep the lights on for a good 18 hours a day. But remember to keep the temperature down. Fluorescent or halide lights along with a fan will help a lot.

Of course it's possible to grow poppies under less or more light. You can even leave the lights on around the clock, though the plant may flower early and leave you with a bonsai version of the poppy with tiny heads. But there will still be opium in the plant.

Until there is a lot more research done into the indoor growing of poppies (like that devoted to orchids or marijuana) it's best to try to mimic nature. But there's nothing wrong with a little experimentation. It's virgin territory. Who knows, maybe a little more blue light would be beneficial. How about playing around with the pH? CO₂ supplementation would probably help, too. Having been around for eons, poppies can withstand a lot, including your wacky ideas.

Some More Suggestions for Planting

Normally poppies are grown in fields but these days it might be better to be a little more creative with your crop. To hide your plants, take advantage of their natural traits.

First, most cops aren't looking for poppies and don't know what they look like. As mentioned, even when they do recognize them, they are often only able to recognize certain varieties at certain times —

like red poppies in bloom. Because so many people associate opium poppies with red petals (and to a lesser extent white) it's a good idea to plant pink or violet ones. The same reason applies to planting poppies with double leaves. Pink poppies with double petals look just like carnations — little puff balls.

Of course such unusual or beautiful flowers might attract attention by themselves in which case you can just lie. In fact, many nurseries sell opium poppies under made-up names, such as "Hungarian Blue Poppies." You can make up a name, too.

In any event, the colored petals are only on the plant for a short time. Then they fall off leaving a lower-profile but very distinctive seed head. These heads are unmistakable to a poppy lover. Sort of pretty and sort of ugly, they, too, will get comments from the neighbors.

One way to hide poppies is to plant them interspersed with other wildflowers whose longer-lasting blooms get all the attention. If the poppy is placed in such a way that its background is also green, it can become nearly invisible.

From the air, poppies can be hidden by planting them alongside a fence or in a thin row that follows the curves of a creek or property line. Poppies don't have particularly bushy leaves and the whole plant tends to grow upward so from the top they don't present a distinctive profile. In this way it is possible to have hundreds of plants growing in a long line and undetectable from overhead.

Unfortunately you can't hide poppies by planting them beneath trees or any other kind of cover since you'll block too much sun. But working in your favor is the tendency for "spotters" in the air to be scanning the ground for marijuana, not poppies, and their eyes or equipment will be geared toward that. Planting poppies amid other flowers is another way to hide them from the air. An enormous patch of flowers can contain lots of opium poppies. That way, even when in bloom, the poppy won't stand out from its flower neighbors unless the observer is on the ground and up close.

It also means the poppies are legal, as they are clearly ornamental.

Where to Get Seeds

A great place to get seeds is from the dried poppies you buy in the craft store. Failing that, you can buy poppy seeds from the grocery store, where they're on sale as a condiment.

There is a potential drawback to grocery store seeds, though. They may not be viable. Supposedly, poppy seeds are sterilized before they get sold, but it certainly isn't always true. In fact, all grocery store seeds I've ever examined have had very high rates of sprouting. Sometimes it takes an extra week or so for them to sprout, but they sprout. Still it is possible that the seeds are no good for some other reason (improper storage or something).

On the plus side, grocery store poppy seeds, bought in the cute little glass bottles in the spice section, are probably from some of the world's best opium cultivars. The seeds are a bit expensive (a bottle costs three or four dollars and contains the same amount of seed you can pour out of a half dozen good-sized heads!), but they probably come from the poppy fields of Tasmania.

Since 1970, two companies, Britain's Glaxo and America's Johnson & Johnson, have invested enormous energy into transforming the island into the world's most effective poppy country. They have tirelessly experimented with the plant until Tasmania's poppies are said to have some of the highest yields in the world. The seeds from these poppies are a rich blue color and the flower they grow is white.

In some grocery stores, poppy seeds can be found in the bulk food section of the store. These cost just a few dollars a *pound* and always seem to sprout!

Another good place to obtain poppy seeds is from any number of mail-order seed companies such as Thompson & Morgan (PO Box 1308, Jackson, NJ 08527). Although these seeds cost \$1.50 or \$2.00 for a pack of a few hundred seeds, they offer some distinct advantages. Besides being guaranteed viable, they can also be selected for color, type of flower and variety. Remember there are many different forms of opium poppy. These companies even sell the luscious "hens and chickens" strain.

Note: When contacting seed companies, don't talk about opium with them. Same goes in a nursery or a garden supply house (where

Papaver somniferum can also be found). Some of these people have already gotten a visit from law enforcement officials and might be a little edgy. Some have already withdrawn *Papaver somniferum* seeds from their catalog.

Harvesting

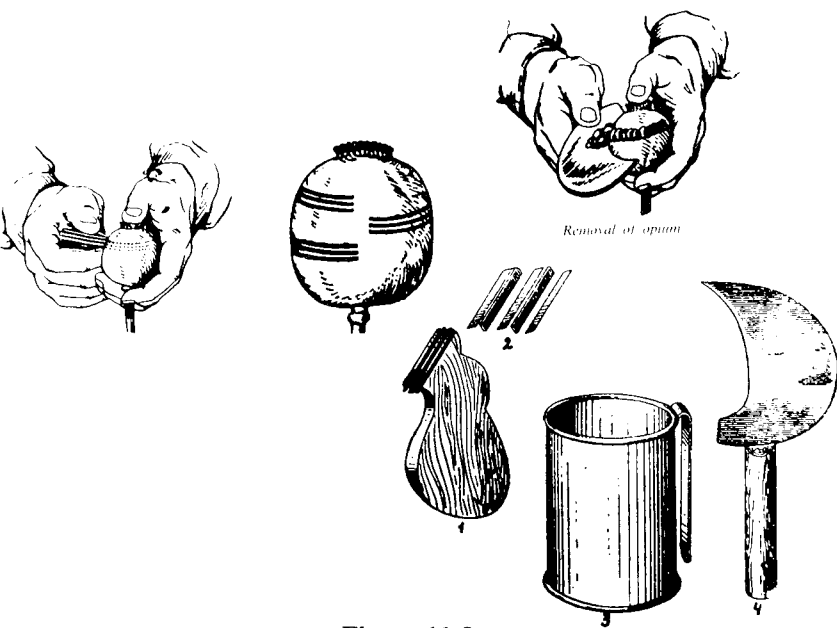
Here's the labor intensive part of opium farming. It may be the reason it never caught on in Europe, where generally child labor was exploited for opium cultivation, child labor that could be so much better exploited at the factories.

There is no hard and fast rule on when to harvest the opium from the ripe capsules. There are a lot of theories about the correct time and method for collecting opium (slice at sunset or dawn, collect at mid-day, etc.), but there are really many different ways to do it, all of them following the same general rules.

About ten days after the petals fall off, the capsules should have taken on a dusty or "frosted" appearance and this is one of the signs the opium is ready. Another sign is when the edges of the flower's "crown" begin to turn upward or at least straight out from the head. At this time, the opium may even begin to seep through invisible cuts in the capsule or build up just under the outer skin, forming little bruises or spots. This is another sign it's time to harvest.

To get the opium out of the plant, make a very shallow incision lengthwise into the first layer of skin on the poppyhead. Normally the knife is drawn from bottom to top in a single, smooth motion. This cut must be very shallow (about one millimeter) for optimum results. Of course any cut in the pod's skin will quickly bring opium out of the plant.

It's OK to make horizontal cuts, or cuts at an angle. One popular way to wound a capsule is to cut a sort of V-shape. The important part is to cut only the outer layer of the capsule to get at the milk, without piercing the inner walls and letting some of the opium ooze into the seed pod. Another old method of harvesting opium is to snip off the heads, gather them together and pierce each one a few times with thick needles. Then the heads are left to ooze all night, and the opium is gathered in the morning.

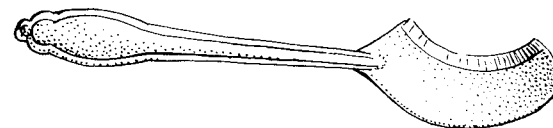
**Figure 11-3**

A popular method for collecting opium. The ripe capsule is incised using a multi-bladed tool (left) and the opium is allowed to seep out. Later, the opium is scraped off using the rounded tool and collected in the can (right). (Illustration courtesy of Michael Starks.)

Old opium hands in Turkey and Iran have many different tools they use to slice the pod and collect the opium but you can use an X-Acto knife, a razor blade, or even a sharp pocket knife. It is possible to make a cutting device with a guide to prevent the blade from going too deep and there are multi-bladed tools for just such a purpose. But a light touch and a sharp blade are sufficient.

As soon as the skin is cut, the opium will bead out along the incision, forming little droplets. As the opium dries, it thickens and turns brown, a fairly quick process. Typically, opium farmers do the slicing in the morning or in the evening and then allow the opium to dry on the pod while the wound heals. After the opium has dried, a dull blade or spoon is used to scrape up the gummy brown opium and save it in a cup or other container until full. The process is repeated until the opium has been collected into kilo-sized balls or cakes.

Another way to collect opium is to place aluminum foil "collars" around the base of the poppy pod to catch any of the opium that drips down the pod toward the stem.

**Figure 11-4**

A spoon can be filed to make an improvised tool for scraping opium capsules.

It's not necessary to allow the opium to dry before collection. In fact, it may be easier to collect before it dries, as the opium is much more fluid before evaporation. The opium as it comes from the plant is also immediately ready to smoke or eat. In fact, you can just lick the opium off the pod right there in the field.

By slicing (wounding) alternate sides of the plant, a poppy can be induced to make more opium, thus letting you milk it for two or three harvests before leaving it alone. This is not guaranteed, however, and the plant may not survive the first wounding. Eventually the slicing will overpower the plant and cut the head to ribbons. The very largest and juiciest pods should be left alone for seed selection and not cut at all so as much energy as possible is put into seed production.

As described in the tea section, opium can also be extracted from the poppy by hot water. Opium is also soluble in alcohol and in ether, but the latter is very explosive, expensive and its mere purchase can put you and a photocopy of your ID on a DEA list. These methods are generally best used with dried poppy plants (also called straw), as is done in Turkey. By far the easiest way to get opium is to collect it in the time-honored way with a sharp knife. This means you get pure opium from the very beginning and don't have to deal with getting rid of solvents — a serious pain in the ass. For that matter, opium can be

extracted from dried poppies with radiator fluid, but this is hardly a commended method. Solvents are not an economical way of getting opium for another reason — too much opium is lost in the process.

Storing Opium

Opium will keep for a long, long time — many years if stored correctly. The best way is to seal the opium to protect it from the air. This keeps the opium from drying out (although drying won't hurt it and only increases its shelf life), but doesn't permit oxidation or growth of fungi or bacteria. In the old days, poppy petals or oil-proofing paper was used. After that, the wrapped opium should be put into another sealed container, such as a cookie tin, and kept in a cool, dry place, away from sunlight. You can freeze opium but that is not necessary.

Storing the opium immersed in alcohol is also possible, but be aware that it will tend to dissolve and make laudanum. Once the alcohol is saturated, though, no more opium will dissolve.

Chapter Twelve:

How to Take Opium

Laudanum

Early recipes for laudanum call for all kinds of things in the mixture but today laudanum is made mainly from grain alcohol and water. The easiest way to make it is to dissolve as much opium as possible into pure grain alcohol, then dilute it to about 50 proof. The laudanum can be flavored in any way you like, using spices or even sugar. It's also possible to dissolve opium into hard liquors like whisky or tequila for a modern take on laudanum. The alcohol preserves the opium and also speeds its delivery into the bloodstream.

Other opium preparations have similar origins to laudanum, meaning there have been many recipes over time. Among these preparations are Paregoric (opium mixed with camphor) and Black Drop (opium with ipecac). Black Drop type opium preparations use water and not alcohol. Pulverized opium was once mixed into an ointment

for topical use. There are literally hundreds of different recipes calling for opium and the stuff has been mixed with such dubious ingredients as chloroform, soap, ox-gall, and lead. Don't forget the frog sperm!

Smoking Opium

Smoking opium seems to have been popularized, if not invented, by the Chinese and has since become something of an art form. The exotic ritualism of opium smoking can be seen in Errol Flynn's description of smoking opium with his Chinese girlfriend, related in an earlier chapter.

Opium prepared for smoking is called a "hop" (we get our expressions "hopped-up" and "hop-head" from this) and is normally made from opium of less than 10 percent morphine content. This kind of opium is normally rejected by opium buyers who need to guarantee a certain potency to their customers.

Before smoking, the opium must be prepared by someone who is skilled in the art of making the "pill", known as "chefing" in America. The "chef" uses a pair of needles called *yen-hok* to manipulate the opium over a flame, drying and heating it at the same time. When the pill (or *yen-pok*) is ready, it is quickly inserted into the bowl of an opium pipe and heated further. Opium is not burned but heated, which creates vapor rather than smoke. The vapor carries the alkaloids straight to the bloodstream via the lungs.

The residue left in an opium pipe is called *yen-shee* and contains a lot of morphine. Hopheads can either smoke this residue again or mix it into their coffee. It is treated somewhat like the dregs of a beer barrel and, typically, *yen-shee* is left over for poor folks who can't afford proper opium.

If the opium is any good, it takes no more than a couple of lungfuls to knock the smoker back onto his back, usually with his head in a pillow. There he lies, taking tokes off his pipe as needed for hours or days. Often, a constantly burning alcohol lamp is kept nearby so the opium smoker need only swing his or her pipe over the flame to resume smoking.

Yen-shee is scraped away with a tool called a *yen-shee gow*. Skilled opium chefs used to be prized by opium smokers who often gave the chef money in addition to letting him or her smoke for free.

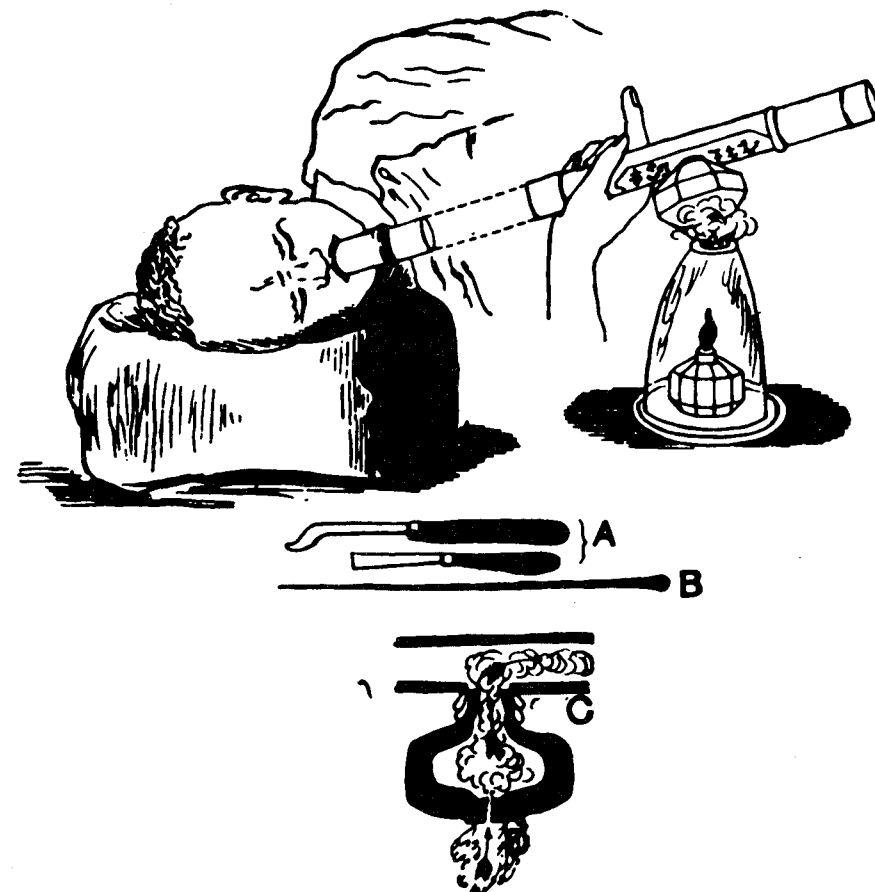


Figure 12-1

The opium smoker in action. A) Tools for scraping the yenshee (residue) out of the pipe bowl. B) Needle for transferring opium to the pipe bowl.

C) A cross-section of the pipe bowl in use.

(Illustration courtesy of Michael Starks.)

Another way to smoke opium is by "chasing the dragon" — placing the opium on a piece of tin foil and heating it from below. When the

Smoke begins to rise, the smoker sucks it up through a short straw. This is a good way to smoke fresh opium that hasn't had a chance to dry yet.

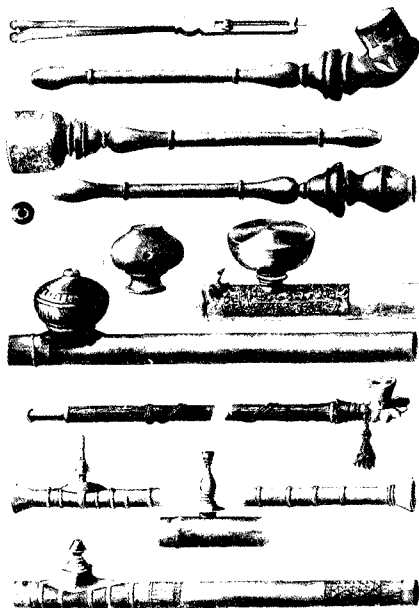


Figure 12-2

Opium pipes from around the world.
(Illustration courtesy of Michael Starks.)

Injection

Opium can be injected and it has been done but it is not a good way to take opium. Usually injections of opium (and wine) have been done only as experiments on dogs... and a lot of the dogs died. Since opium is a fairly solid substance, it's hard to inject without diluting and is hard to dilute in the first place. Also, opium may easily contain plant fibers or other contaminants that can cause serious and even fatal infections. Don't shoot opium.

Snorting

Yep, you can snort opium. Dissolve it into some hot water and sniff it up your nose. This is not a popular method.

Other Considerations

To maximize the effects of opium, take it on an empty or nearly empty stomach. This gives it a better crack at your bloodstream.

It may also be that taking the amino acid tyrosine will either potentiate or extend the effects of opium. Tyrosine is one of the major building blocks of endorphins and it's possible that extra tyrosine will prevent the breakdown of opium you take into your system.

Don't forget to try poppy salad! The larger leaves are as crunchy and tasty as romaine, with the bonus of built-in opium dressing. Some people also like to chop up the heads and sprinkle them onto their salads. The stems are a little too fibrous for salad.

Both leaves and stems can be smoked. The effect is a sort of an "instant nod" that dissipates within ten minutes. Poppy smoke is harsh, so it's best to smoke it through a water pipe.

Opiate absorption is inhibited by taking antacids, so lay off the Tums while eating opium! At the same time you might try mixing some lime or lemon juice into your poppy tea as it's brewing — *theoretically* the acetic acid (which is present in the juice as part of the larger carboxylic acid, citric acid) should transform a very small amount of the morphine into heroin. Apple cider vinegar, which contains around 4% acetic acid should have the same effect but tastes terrible. There are ways to extract a purer form of acetic acid from vinegar but it's a lot of work for not much product. Acetic acid is otherwise very hard to come by and is watched by the DEA.

Please note that the above suggestion is theory only and would be a terrible way to make heroin. It's just a way to add a little bang to your opium.

Chapter Thirteen:

Poppy Politics

— War and Laws

Without doubt, the most addictive thing about opium is the money it can generate. Opium's most destructive effects are the wars fought over the stuff, wars that are still going on today.

They say it takes no more than one or two sweet deals or a single monopoly to transform normal tyrants into raving opium-money addicts.

Opium-money addicts are vicious and pitiful creatures who suffer from delusions of grandeur and persecution. Oblivious to their own wretchedness, they see themselves as great statesmen, scientists and physicians whose own use of opium is enlightened. Yet they consider fellow addicts grotesque monsters — even devils — whose use of opium is worse than demonic. This kind of schizophrenia leads inexorably to mayhem.

When his supply is threatened (or when his habit requires even larger doses of money) an opium-money junkie can become violent. That's when these menaces become true threats to the community, for

they don't confine their battles among themselves. An opium-money addict seems not to be content unless he is able to poison the lives of everyone around him — everyone, not just family members, but complete strangers!

It is not uncommon for these addicts to deliberately incite wars, conscripting their neighbors to die for opium. Often this is done under cover of religion or nationalism. The opium-money addict can be very cunning and his flowery words have seduced millions into slavery and death.

Aye, beware the opium-money addict. His words are lies and his soul is corrupt. Few are candidates for redemption.

The "Opium Wars"

Politically, opium allowed Britain to control colonial China and India at the same time it made a profit off the difference in price between Asian and Mexican silver. Opium grown in India was force-fed into the markets of China and all the money came home to Britain. It is a popular idea that the Opium Wars in the mid-1800s between Britain and China were caused by the righteous indignation of the Chinese trying to throw off the yoke of opium addiction. This is not the case.

The opium wars were caused when the Chinese emperor tried to cut opium trade with Britain so *he* could sell opium, preferably his own domestic opium. The Chinese simply wanted a cut of their own lucrative market. After all, the population was Chinese, and Chinese are just as capable of growing poppies as anyone else. Might as well keep all that silver at home.

Under threat of war, China was forced to buy a certain (large) amount of opium from Britain every year, but the British couldn't care less what they did with it. In fact, sometimes opium shipments from India were locked up in warehouses or destroyed. In the end the Chinese agreed to keep on buying British opium, but added their own surcharge to the final price.

But the Opium Wars did give the United States a chance to break into the British monopoly and expand trade in China. Outrage over opium was the cover as Americans presented themselves as nicer

foreigners, preaching the anti-British, anti-opium line. At the time the U.S. didn't have any laws against opium either. In fact, the U.S., too, was selling opium to China (though not as much).

In case anyone thinks Americans truly had a moral problem with selling opium to foreigners, it should be noticed that opium trade was not restricted in the Philippines once the United States attacked the islands and took the country from Spain in 1899. Instead, the U.S. simply began picking up the receipts from opium sales previously paid to the Spanish monopoly.

In the United States itself, there was no restriction of any kind on opium until a tariff on smoking opium imports was levied in 1909. In the U.S. colony of the Philippines, American lawmakers eventually took bold steps to outlaw opium smoking, but only for the Chinese, not white people. It wasn't until 1915 that opium was truly outlawed in the United States by the Harrison Act, which sought to control narcotics use by tracking and restricting sales. Using its power to tax, the federal government claimed dominion over all the opium in the country.

Earlier versions of the Harrison Act had also outlawed caffeine and alcohol, but never got through Congress. Although the Harrison Act controlled other drugs (e.g., cocaine) it was mainly aimed at opium and its derivatives (although, out of pure ignorance, heroin was not included in the Act and continued to be legal and sold without prescription).

Opium was essentially the first drug to be criminalized by the U.S. government. Key legal decisions made afterward regarding opium and opiates paved the way for even more government control over private lives, culminating first in Prohibition, then in today's barbaric War on Drugs. Later laws increased or expanded these restrictions.

Today's Laws on Opium Poppies

The Opium Poppy Control Act of 1942, like so many other laws, was intended "only" as a tax law, but it effectively outlawed the cultivation of poppies even if grown for their seeds alone and the rest of the poppy destroyed.

So, deliberately growing a half acre of opium poppies seems technically illegal. Yet large scale cultivation of opium poppies is carried on in many places by flower growers who sell them both fresh and dried. If poppies grown and used for ornamental purposes are illegal, it should be noted that laws against them are not enforced. Major seed companies sell opium poppy seeds specifically for growing and poppies are imported from overseas.

Opium, the juice of the poppy, is a controlled substance but it's unclear how illegal the plant itself is. Since police and prosecutors have never demonstrated a clear policy on having a few bunches of poppies, or making poppy tea, I look to the federal law for some guidance. To this end I refer to Alexander Shulgin's exhaustive research of drug law in his book *Controlled Substances*. This book has won praise from the DEA's Western Division itself.

Opium is a schedule II narcotic, and if you get caught with it, your penalty will — like all other federal crimes — derive partly from its gross weight. Therein lies the first of several problems.

It appears opium can be legally compared to half that amount (by weight) of heroin. Morphine, too, can be officially calculated to be one half the strength of heroin. So if you've got 10 grams of opium you might be treated as if you had five grams of heroin. Same goes if you have 10 grams of morphine.

This comparison is pretty much correct for morphine, which is roughly one-half or one-third as powerful as *heroin*, but it's way off for opium. As we've seen, a gram of *high grade* opium does not contain more than about 10% morphine, (that is, 100 milligrams; one tenth of a gram).

If opium is computed as one half heroin, then opium penalties are five times harsher (by weight) than morphine penalties although it's only a tenth as strong!

The law, it seems, views opium as ten times worse by weight than morphine. If this is so, then a prudent dope fiend would immediately transform his crude opium into the most refined heroin possible, so he will get the lightest penalty. This situation is clearly not equitable.

Then again, the law also recognizes "other Schedule I and II drugs" besides heroin and morphine and fentanyl (the three "big ones"). So opium could be categorized here, where the mandatory sentences are considerably lighter. This way there need be no argument as to the

potential strength of opium since there is a legal definition of it. Although not described in any later laws, opium is defined in the Opium Poppy Control Act as basically what it is — the juice of the opium poppy. This is opium's only explicit legal description.

But what about the flower? The whole plant? Just the seed capsules? Are they illegal? How illegal?

The law also recognizes something called "poppy straw," described as all parts of the poppy plant (with the possible exception of the root).

Poppy straw and "poppy straw concentrate" are both categorized as Schedule II narcotics along with tincture of opium, opium powder, etc. Other opium-containing concoctions are described in less restrictive schedules, some as high as Schedule V (the higher the number, the less illegal). Codeine cough syrup is Schedule V, while pure codeine is considered Schedule II. Other codeine-containing pills are Schedule III.

"Poppy straw concentrate" doesn't seem to be defined and could well be considered any distillation of straw including poppy tea of any strength.

Because the poppy plant *can* be considered illegal but is not clearly defined in the federal sentencing guidelines, this puts a person with poppies at the mercy of the prosecutor as to just what he possesses. If he wants, the prosecutor could find the poppies of no particular danger and do nothing. He could also assert the person had committed a crime and go from there.

What Crime?

A prosecutor could claim poppies are "other Scheduled II narcotics" or he might classify the whole flower as "opium." Of course, the whole plant is not opium, but it seems possible legally.

The crime is really up to the prosecutor. Poppy straw does not have a DEA number nor is it explicitly compared to any other drug. It is grouped under "opium" along with tinctures, powders, etc. Thus it could be measured as a Schedule III, IV, or V narcotic like paregoric or cough syrup.

If the prosecutor goes the hard route, a 16-ounce glass of poppy tea (which contains about 1.5 grams of opium) could be counted as half a kilo of heroin! Several dozen bunches of poppies might be equated with a steamer trunk of heroin.

Or those same plants might be equated with a bottle of cough syrup. They might not be illegal at all.

Thus, the law is not clear on poppy tea, nor the opium extracted from legal flowers (and not further refined). You might face probation, you might face six months... you might be looking at life. Your prosecutor will decide what to charge you with, indeed whether to charge you at all.

Jury Power

But your *jury* will decide whether you did anything wrong. If you are ever on a jury, know that it is not only your power, but your duty to judge both the facts of the case as well as the law itself. The jury's decision cannot be questioned.

It is legitimate and required that a jury act according to its conscience. The jury decides whether a crime has been committed or not, regardless of the law. Laws can be wrong, they can be overly harsh, and they are often found unconstitutional. The American system requires the jury to judge the law for a good reason. It is our safeguard against bad laws, mean-spirited prosecutors, outrageous penalties or the creation of laws that violate a citizen's freedom or rights.

In this way, elected or appointed officials can pass or declare all the stupid laws they want, but they will have no effect if the people (the true government) refuse to enforce them. During prohibition, more than half of those tried for "breaking the law" by having alcohol were acquitted as juries refused to find them guilty.

This did not mean the jury approved of alcohol; it meant they were unwilling to judge their peer a criminal or to punish him because he possessed or drank alcohol.

The jury judges both the facts of a case and the law. Ask the judge and he will be forced to tell you about it. In case he tries to weasel out of it, here is a quote from Supreme Court Justice Harlan F. Stone:

"If a juror feels that the statute involved in any criminal case being tried is unfair, or that it infringes upon the defendant's natural God-given inalienable, or Constitutional rights, then it is his duty to affirm that the offending statute is really no law at all and that the violation of it is no crime at all — for no one is bound to obey an unjust law.

"The juror must vote 'not guilty' regardless of the pressures or abuses that may be heaped on him by any or all members of the jury with whom he may, in good conscience, disagree. He is voting on the justice of the law according to his own conscience and convictions and not someone else's. The law, itself, is on trial, quite as much as the case which is to be decided."

Therefore, the real law regarding poppies rests with the People. You decide.

Anti-Poppy Propaganda

Strangely enough, though a Constitutional amendment was required to outlaw alcohol, the Supreme Court ruled in 1919 that the Harrison Act (though "only" a tax law) did permit the government to decide what was proper medical use of narcotics. The AMA, which had originally backed the bill, got angry, but there was no turning back. From then on doctors would take their orders from the government or go to jail. Drug users became criminals. By 1923 the federal prisons were stuffed with drug offenders and wardens were crying for either more prisons or fewer drug user convicts.

Sound familiar?

As today, the use of illegal drugs was portrayed as a foreign problem foisted on America by various infidels — sometimes Chinese, sometimes Turks, but it could be anyone. Special emphasis was therefore placed on ways to control the foreigners behind the un-American demand for narcotics. Soon it was realized that opium, morphine, and especially heroin, were the tools of Bolsheviks and trade unionists.

Appropriately vigorous methods were used to quash these enemies. Political police actions were couched as narcotics control. And no wonder! By the 1950s it was a known fact that both Russia and China had a complex scheme of using dope and propaganda to poison our

nation's youth. FBI head, J. Edgar Hoover, had said it. Heroin was synonymous with Communism.

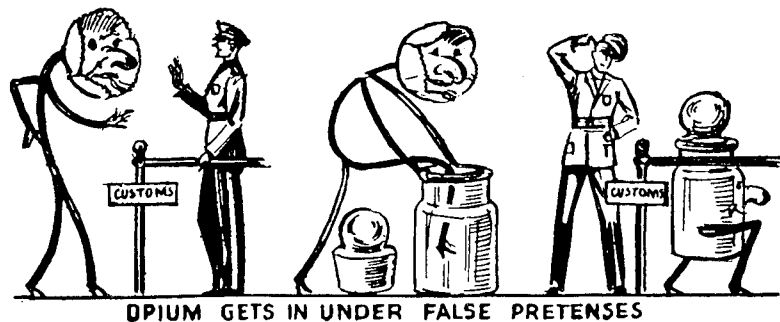


Figure 13-1

Propaganda from the 1930s showing how our friend the opium poppy slips past customs.

Poppy cultivation outside of Turkey or Iran (where the U.S. was in charge economically and militarily) was de facto evidence of a perverted and heathen people. Today it is no different, except India has taken the place of Iran as a "legitimate" producer.

And though the use of crude opium in America has dropped, its political use is not gone. These days opium is being resurrected as the root cause of a huge rebellion in Burma, with one "warlord" there (Khun Sa of the Shan province) already having been indicted by the U.S. courts in 1990 as a drug dealer, like Panama's former leader Manuel Noriega.

Maybe we'll see another opium war before the century is out. News reports of the past years tell of coca farmers in South America growing opium poppies... and large poppy farms have already been destroyed by U.S. helicopters in remote Mexico, but poppies are still grown in abundance in the northern mountains there. Poppies have been cultivated for centuries all over Central and South America and are firmly established there. Drug officials estimated in 1989 that more than 25,000 acres of Columbia alone had been turned over to poppy production — enough to manufacture at least 20,000 pounds of

heroin per harvest. Other places in South America are turning to poppies as a superb cash crop.

Opium Today The Drug War's War Against Itself

Opium grown in Columbia, Thailand, Burma and other places "unapproved" by the U.S. government is sold to other countries as medicine, or used to make heroin. Strangely, U.S. anti-drug policy has contributed much to the world-wide expansion of opium production — supposedly the reverse effect of drug "control."

First, the U.S. rewards certain nations for producing opium (Turkey and India) but punishes other countries if they should produce it (Pakistan, Thailand, etc.). It has also turned a blind eye to opium production in certain parts of the world for political reasons. If the money is being used in ways that further U.S. foreign policy objectives, no problem. That's why there was no attempt to curtail opium produced in Afghanistan while it funded the *mujahedeen* fighting Soviet troops. During the Vietnam war, U.S. military planes flew Burmese and Laotian opium into Saigon, where it was made into heroin and sold around the world. Since the money was used to finance anti-communist armies, it was encouraged.

Next, the United States steadfastly refuses to allow the cultivation of opium poppies in America, believing it can keep a potential "drug problem" overseas by letting foreigners produce it.

To keep the menace overseas, the government developed a quota system in which only three companies, Johnson & Johnson, Mallinkrodt Inc., and Penick Corp., are licensed to purchase opium in the first place. They are then required to choose between either Turkey or India for 80% of their opium purchases and are required to buy the remaining 20% from among five other countries — Australia, France, Hungary, Yugoslavia, and Poland. All other opium is illegal, even though it is grown in so many other places. The plan has created some problems since the competition between Turkey and India is unequal and the inequality is directly caused by U.S. drug policy, ostensibly designed to limit "illicit" opium production.

Most opium purchased by the U.S. is Indian, even though Turkey has complied in so many ways with the wishes of the U.S. government in the vain hope of gaining the U.S. market.

India still uses the time-honored (but not pilfer-proof) method of slicing the poppy capsules by hand. It's not the method favored by the U.S. government, but it is a far more flexible and efficient method. Because of this, India can provide thebaine, the opium alkaloid which is used to produce many of the more powerful semi-synthetics. Thebaine can even be made into codeine.

But Turkey cannot manufacture all the important alkaloids available from opium, because Turkey's production system is based on chemical extraction from dried poppy heads — a method promoted by the U.S. government. Turkey's system can provide morphine and codeine, but not thebaine and the other alkaloids. This method might cut down on opium theft, but has driven off U.S. business.

Turkey still produces opium in abundance, as well as the morphine base so important in the manufacture of heroin. Whether the U.S. buys it or not, it's still a valuable product.

India's economy, of course, has a large stake in opium, selling a good 550 tons each year (mainly to the U.S.). This makes India dependent on the U.S., whose policy effectively mandates that all American companies buy from them. This dependence has caused India some problems in recent years.

Lately, to punish India for "unfair trade practices" the United States has hinted it may just go elsewhere for its opium. This would be good news for Turkey except there remains the problem of no thebaine. Cutting off India also means heavier competition for American opium money from other opium-producing countries looking to fill the lucrative gap. Turkey is by no means a shoo-in should India be shut out.

Of course India has a surplus of thousands of tons of opium. If the U.S. decides to cut them off, these stocks will grow even larger. That opium is still worth money and will be sold... probably to manufacture heroin.

Restricting opium manufacture will never reduce the amount of heroin made. Simple economics makes that impossible.

Opium demand is not elastic. It is used to make medicine and, so far, has not been replaced by synthetics. There is no other source of morphine or any other opium alkaloid and demand for these medi-

cines grows with the population. As opium supplies destined for medicinal purposes are diverted to heroin production (which is much more lucrative anyway) more opium must be grown to meet the world's medicinal needs.

Thus, each effort to suppress heroin production by restricting opium cultivation encourages more opium production elsewhere. Of course this also tends to drive down the price of heroin, making it cheaper and more available than ever. When a glut of opium floods the market, the cheap price means lower profit margins and encourages vigorous marketing. Heroin salesmen need to sell more to get the same amount of money.

If the goal is to discourage heroin production, it would be hard to devise a stupider way to do it.

The U.S. policy of encouraging some countries to produce opium and trying to stop others from doing it is as non-sensical as it seems on its face. If India is allowed to profit from opium, why not Pakistan? Why buy it from France, but not from Austria? Trying to stop a country from producing what is clearly in demand in legal and illegal markets around the world ignores the fantastic financial power of opium.

That power has caught the attention of other opium producers, and enticed potential producers into the market. South Americans aren't the only ones considering the poppy as a cash crop.

The value of opium was demonstrated in 1993, when the parliament of the newly formed republic of Kirgizistan considered producing opium for export. That country is thought to have some of the best quality (17% morphine) opium in the world and it was estimated that the production of 100 tons of opium could bring the former Soviet state more than one billion dollars.

But the plan was vetoed by the country's president since he did not want to lose out on potential subsidies and investment from the U.S. and other Western countries. But what about next year when Kirgizistan fails to reap even a fraction of a billion dollars from Western hand-outs or joint ventures?

What could be as stupid and futile as a war against opium? Making peace with the poppy would be so much better. Instead of poverty and war caused by the desire to control a flower, we could continue down the scientific and humane road we veered off a hundred years ago.

Already, the study of opium has led to startling and important medical discoveries. The insight it has given us into our bodies and minds is only a taste of what can be derived from a single plant. There are plenty more plants where the poppy came from and opium's example can help us make similar use of the millions of other plants.

Opium has been with us for thousands of years. Despite attempts to destroy it or transmogrify it into our own image, its value to humans has only grown, not diminished. Let's admit the obvious: Opium has relieved oceans of pain and misery and has stimulated growth and thought. We cannot do without it and we have not been able to improve on it either by turning it into heroin or dousing it with Agent Orange.



Figure 13-2
Plant, pipe and needle: opium for the masses.

Bibliography

Addicts Who Survived, Knoxville, TN 1989, University of Tennessee Press, by David Courtright, Herman Joseph and Don Des Jarlais. Despite the ominous sound of the title, this book is not at all negative or judgmental. Through interviews with old people at a New York methadone program, the reader learns about the life of junkies in the "classic" era of narcotic control: 1923-1965. Truly engaging.

The American Disease, Oxford, NY , 1987, Oxford University Press, by David F. Musto, M.D. An examination of narcotics controls laws and their social consequences. Documents the origins of the various "wars on drugs" in the United States and all their various players. Depressing.

Controlled Substances, Chemical and Legal Guide to Federal Drug Laws, Second Edition, Berkeley, 1992, Ronin Publishing, by Alexander T. Shulgin. The *American Book Review* calls this work "awesome in scope and a marvel of cross referencing... indispensable to attorneys, legislators, researchers, drug educators, chemists, journalists and prosecutors." The Western Laboratory Chief for the DEA, Robert K. Sager, said this book "Solved one of my biggest headaches, namely what chemicals are we supposed to be controlling?; When were they controlled?; What Schedule are they?..." This book is indeed awesome.

Culpeper's Complete Herbal. Written by Nicholas Culpeper in the early 17th century, this herbal book has been reprinted many times and remains an excellent source of information on almost all herbs including a half dozen kinds of poppies.

Flower of Joy, New York, 1944, Wiley Book Company, by Hendrick DeLeeuw. A novelesque report on opium that wanders around the subject matter, eventually degenerating into a diatribe against the "Yellow men of Nippon" and their German-backed "gigantic plan to drug" their enemies. He laments that "nothing was done to check the devilish scheme." Kind of humorous.

Flowers in the Blood, NY, 1981, Franklin Watts Publishing Company, by Dean Latimer and Jeff Goldberg. Maybe the best book on opium and opiates. Covers it all — history, pharmacology, legal aspects. Has a particularly extensive part on the Sino-British "Opium Wars" and all their intrigue and mayhem.

From Chocolate to Morphine, Boston, 1993, Houghton Mifflin, by Andrew Weil, M.D. and Winifred Rosen. A funny little book intended as a primer on drugs, it contains much accurate information and good illustrations. There is, however, a decided bias against the use of opium and opiates. This bias does not extend to alcohol, which they advise to take in order to loosen up at a party.

Henley's Formulas, NY, 1979, Avaenal Books. First published in 1907, this book contains thousands and thousands of recipes for everything from gunpowder to toothpaste. Read between the lines and it's also a guide to making precursor chemicals from their

natural sources. Also contains recipes for various medicines, some containing opium.

Licit and Illicit Drugs, Boston, 1972, Little, Brown & Co., by Edward M. Brecher and the Editors of *Consumer Reports*. This is the best drug book ever written. Twenty years have not aged this encyclopedic work one bit. Straight and thorough information on all drugs — including glue!

The Medical Skills of Ancient Egypt, Canton, MA, 1989, Science History Publications, by J. Worth Estes. The Boston University professor of pharmacology has written a painstakingly researched analysis of ancient Egyptian medicine and hieroglyphics. Technical but very readable. Though there's not a lot on opium, the author does discuss whether and how it was used by ancient Egyptians.

Messengers of Paradise, NY, 1989, Anchor Books, by Charles F. Levinthal. The theory and application of opiate science. Plainly explains what is known, and what is not known about opiates. Mostly concerned with the study of opiate receptors and endorphins, this book is a perfect introduction to the body's own "morphine."

On the Trail of the Ancient Opium Poppy, London, 1984, Associated University Presses, by Mark David Merlin. Six years of intensive research went into this botanical and archeological study of the opium poppy's origins and development. Examines theories of its cultivation and domestication along with its use by people from Cro-Magnons through the Bronze Age.

Opium and the People, New Haven, 1987, Yale University Press, by Virginia Berridge and Griffith Edwards. This book examines in detail opiate use in 19th century England. The authors cover not just those famous "opium-eaters" such as Coleridge and De Quincey, but also for the use of opium by the common man and woman (and child, for that matter). Particularly interesting is a chapter on opium use in a part of England called "the Fens" — a swampy area where opium use was nearly universal. An excellent history of the drug before it became known as a tool of the devil. Includes information on opium dosages and preparation.

Opium Poppy Garden, Berkeley, 1993, Ronin Press, by William Griffith. Two thirds of this book reads like an episode of the old TV series of *Kung Fu*, as the reader accompanies Ch'ien , a young Chinese man wandering around Latin America (?) musing on Taoist teachings. After this story, the book provides excellent illustrations, diagrams and photos of poppies along with information on cultivation, instructions on slitting the seed pods and an overview of opium pharmacology.

The Pathology of Drug Abuse, Boca Raton, FL, 1993, CRC Press, by Steven B. Karch. An excellent book for understanding the structure of opiates and opioids (as well as other drugs, such as amphetamines). Extensively researched, clearly written and heavily illustrated.

Poppies, San Francisco, 1988, Mercury House, by Eric Detzer. In his autobiographical "odyssey of an opium eater," Detzer describes how he fed his poppy habit for years by raiding gardens in Seattle and nearby areas. A lot of the book is concerned with his continual attempts to "kick" and gives some good insights into opium withdrawal but is a little maudlin. Detzer's information is accurate (he describes his own method for making tea) but he comes off as a pathetic character who hates his love for opium.

Textbook of Materia Medica, Fifth edition, NY, 1930. The MacMillan Co., by A.S. Blumgarten. Written in 1914, just before the Harrison Act, this books shows the extents to which opium and other plant-derived substances were used in medicine. Lots of recipes, dosages, etc., for opium medicines. Also information on the use of valerian, lobelia, marijuana, belladonna, and other plant medicines.

The Traditional Healer's Handbook, Rochester, VT, 1991. Healing Arts Press, by Hakim G.M., Chishiti, N.D. A great book and practical guide to ayurvedic, tibb, and other "herbal" medicine. Draws from original sources in Arabic, Persian, and Hindu texts.

In addition to these books, I have taken information from scientific and horticultural articles from the turn of the century dealing with poppy cultivation as a legitimate enterprise. Further information has

been culled from newspaper clippings and from first-hand observation and discussions with botanists, junkies and cops.

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