MICHKA

J. CERVANTES, R. C. CLARKE, C. CONRAD,
Prof. A. JANSEN, Prof. R. MECHOULAM Ph.D.,
Prof. M. GUZMAN Ph.D., Dr. D. RICHARD,
Ph. LUCAS and D. E. WIRTSHAFTER J.D.

Medical Cannabis

FROM MARIJUANA TO SYNTHETIC CANNABINOIDS

MAMA EDITIONS

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Textile hemp is used for insulation in ecological building.
Here is some hemp growing in France at Montjean-sur-Loire.

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How Much Longer Will Medical Marijuana Be Illegal?

MICHKA

Cannabis is one of the oldest known medicinal plants. The list of its therapeutic uses is so long it breeds skepticism, yet the evidence keeps piling up. But if it really is a precious medicine, why isn't cannabis widely used in the health care industry?

Michka is a French writer, whose books about cannabis have been published in several languages. Called as an expert witness in court cases, she is also a journalist who travels regularly between Europe and America. She has observed the uses of both recreational and therapeutic cannabis for more than thirty years.

So far, 800 varieties of cannabis (hemp or marijuana) have been identified. The stems of all these varieties contain fiber, and the flowers contain extremely variable levels of delta-9-tetrahydrocannabinol (THC), the active principle traditionally sought by both recreational and therapeutic users.

Cannabis contains almost 500 components, 66 of which are not found anywhere else in nature—that is why they are called "cannabinoids." Marijuana also contains a multitude of flavonoids and over one hundred terpenes. Contrary to other drug plants, cannabis does not contain alkaloids, which are the active principles in poppy and coca leaves. Alkaloids are toxic, and deadly in high doses.

An overdose of marijuana or hashish (a preparation made from the flowers) provokes, at worst, an anxiety attack followed by a deep

sleep from which one rises refreshed. In several thousand years of use, cannabis has never killed anyone—a fact that has not prevented international lawmakers from considering it a dangerous narcotic.

Cannabis is in a class by itself in the world of scientific knowledge. Although the chemistry of alkaloids was already well understood in the nineteenth century, its active principles were not identified until the 1960s.

But let's make a quick detour into the recreational use of marijuana.

Cannabis Prohibition

It wasn't until the second half of the twentieth century that the effect Indian hemp (as it used to be called) had on the consciousness of consumers became a scandal in the West. When writers and artists in Paris from the *Club des Hashischins* tried it back in 1845, their exploration didn't cause much of a stir. However, when the black musicians who invented jazz—a style of music deemed scandalous—became interested in marijuana, it was perceived in a quite different manner. At a time when society was bitterly divided by racial segregation, the fact that cannabis was associated with descendants of black slaves and migrant Mexican laborers initially led to its being seen as a menace to society.

By the end of the 1930s, marijuana (a word of Mexican origin) use was widespread enough in certain segments of American society to worry legislators. In 1937, the Senate hastily voted in a tax on hemp that was so weighty it basically amounted to a prohibition.

This tax did not, however, have the desired effect. By the 1950s, the beatniks—those traveling white jazz heads—became interested in marijuana and widened the circle of those "in the know." But it was the hippie movement of the 1960s that made weed its emblem and brought marijuana into every white middle class household. Pot surged in popularity in the hands of those demanding we "make love not war." Parents were horrified. Governments took emergency action. Prohibitive laws, with assorted severe sanctions, were hastily passed in most Western countries.

Indian Hemp: A Universal Remedy

In its regions of origin, *ganja* had always been considered a sort of universal remedy. The West first discovered its medicinal uses during the colonial conquests of the nineteenth century. A French doctor named Aubert-Roche was introduced to the plant's use during Napoleon's campaign in Egypt, and later an Irishman, Dr. William B. O'Shaughnessy, came across it in India around 1840.

Once back in Europe, these doctors sang the virtues of "Indian hemp"—a term used until the end of the 1950s to designate the varieties rich in THC—so eloquently that it was quickly adopted for treating a wide array of ailments.

For decades, Indian hemp (cannabis) was prescribed for pain and the treatment of spasms and convulsions, tetanus, rabies, epilepsy, tonsillitis, coughs (even tubercular), asthma, insomnia, migraines, and loss of appetite. It was used in detox treatments for alcoholics and heroin addicts, as well as for easing childbirth and treating menstrual problems. Queen Victoria's doctor prescribed it to help with Her Majesty's painful periods!

At that time, cannabis was used in the form of a tincture obtained by macerating the plant in alcohol. Depending on their origins, different batches of Indian hemp contained more or less of the active principles, meaning the medicine would drastically vary in strength. If it was too weak, it had no effect; if it was too strong, the side effects were bothersome. The manufacturers did not know how to control the dosage, because the active principles had not yet been identified.

During this time, the newly-invented hypodermic syringe was beginning to be widely used. Because the active principles are not

soluble in water, it couldn't be injected, unlike morphine, which quickly replaced it in the treatment of pain.

WHAT IS THE DIFFERENCE BETWEEN HEMP AND CANNABIS?

In 1753, the Swedish botanist Carl von Linné invented our system of plant classification using the Esperanto of his time: Latin. He called hemp *Cannabis sativa L.,* which means "cultivated hemp" in Latin. (The "L." signifies "according to Linné's classification.")
The English word *hemp* and the Latin word *cannabis* both refer to the same plant.
However...
In 1961, the Single Convention on Narcotic Drugs of the United Nations classified hemp (cannabis) as a "narcotic with no medicinal value." Ever since then, the word "cannabis" has been imbued with a special connotation, as though there were two different plants: on one hand, the "good" hemp for textiles, and on the other hand, the "bad" psychotropic cannabis.
In fact, all varieties of hemp/cannabis contain in varying proportions sturdy fiber in the stem, huge nutritional richness in the seed, and psychoactive and therapeutic principles in the flower. All varieties resemble each other—it is impossible to tell most of them apart with the naked eye—and they all hybridize with each other.

These difficulties contributed to the eventual phasing out of Indian hemp tincture. The shift was made official in the beginning of the 1950s, when most Western countries removed Indian hemp from the Pharmacopeia—the official list of medications.

From then on, cannabis no longer held the status of medicinal remedy and could no longer be prescribed by doctors. It was the end of an era.

An Accidental Rediscovery

During the 1960s, while throngs of young people were smoking joints and dreaming of trips to Katmandu, the general public had long forgotten that cannabis had been used as a medicinal remedy since time immemorial.

Chance meetings between patients and recreational marijuana brought about the rediscovery of its therapeutic virtues. An American GI who served in Vietnam, James Burton, recounted how he discovered that smoking herb restored his clarity of vision, which he had been losing due to hereditary glaucoma. Harvard Professor Lester Grinspoon described the way that violent nausea caused by chemotherapy can be eliminated and replaced by a solid appetite after a few puffs of marijuana, as he witnessed with his own son, who had leukemia. Others described how cannabis diminishes the spasms caused by multiple sclerosis to the point that the patient can function again. The list of uses rediscovered by chance kept growing every year.

These first lucky discoveries launched a wave of research. At the beginning of the 1970s, thousands of new studies were undertaken. The first results were very promising, a fact that did not suit the American government, which was dead set on prohibition. As a result, in 1976, research on cannabis was simply outlawed in the United States, because the federal government believed it was inappropriate to send young people a contradictory message by recognizing the virtues of cannabis.

The embargo on research held fast throughout the 1980s and beyond. The absence of studies demonstrating the therapeutic efficacy of cannabis gave the world the impression there was nothing of value to investigate.

However, an ever-growing number of users is now demanding free access to this plant that is easy to grow in a garden, on a balcony, or even indoors at home.

Question: What percentage of so-called “recreational” users is self-medicating without realizing it?

Question: Must we deprive patients of a medication that they consider irreplaceable under the pretext that recreational users will benefit from the situation?

A Half-Century of Research

At last, in 1964, at the University of Jerusalem, Professor Raphaël Mechoulam identified the structure of THC (delta-9-tetrahydrocannabinol), the main active compound in cannabis. During the following years, the professor continued his work, while in other countries authorization for research was systematically refused to scientists who dared to ask.

In 1992, almost thirty years after having identified THC, Professor Mechoulam and his team discovered its *endogenous analogue*, a substance resembling THC but fabricated by our own bodies. This chemical was baptized “anandamide” after the Sanskrit word meaning “happiness.”

As Professor Mechoulam prophetically wrote: “We are in the middle of a small therapeutic revolution which should bring us, over the course of the coming decades, new medications in many different domains.” The discovery of an analogue THC opened up new perspectives. Since the human organism produces anandamide, then receptor sites must also exist. In effect, the receptors that anandamide (or THC) affixes to were in the process of being discovered, and it turned out they are disseminated throughout the body, from the brain to the spleen or the tonsils, and to the uterus in women.


D.R.

While stationed in India, Dr. William B. O’Shaughnessy meticulously reviewed nine centuries of medical literature dedicated to hemp, and then brought that knowledge back to Europe.


D.R.

Two doctors presided over the Club des Hashichins in the Hotel Lauzun in Paris, where Alexandre Dumas, Théophile Gautier, Eugène Delacroix, Honoré Daumier, Gérard de Nerval, Honoré de Balzac, and others were given dawamesc (a delicacy containing sugar, spices, and a strong dose of hashish).

D.R.

Tax stamps issued in 1937 following the historic vote on the *Marijuana Tax Act,* which established prohibition under the disguise of a tax. The prohibition would gradually be imposed on the entire world, all the way to India, where the plant plays a traditional role in the culture and religion.

D.R.

Hemp, alias cannabis, all-around remedy of the second half of the nineteenth century, was most frequently prescribed as a tincture (the extraction of the active principle by maceration in alcohol) and taken orally.

THERAPEUTIC PROPERTIES OF CANNABIS

The tens of thousands of studies on cannabis have proven that the plant has the following properties: it is analgesic, antiemetic, antispasmodic, anti-inflammatory (due to the non-psychoactive CBD it contains), and it is also a vasodilator. In addition, it is a sedative, a muscle relaxant, and an appetite stimulator. It can also play an anxiolytic role, be an antidepressant and antipsychotic.

As such, it is frequently used to:

- diminish or suppress the nausea and vomiting associated with chemotherapy or radiation (cancer, AIDS, HIV, hepatitis C)
- return appetite to undernourished patients (cachexia)
- reduce muscular spasms (paraplegia, quadriplegia, multiple sclerosis, colitis)
- reduce the frequency of epileptic seizures
- treat pain (chronic pain, cancer, fibromyalgia, Crohn's disease, migraines)
- reduce ocular pressure caused by glaucoma
- facilitate sleep
- help quit alcohol and opiates (heroin, morphine, codeine) and stimulants (cocaine) and anxiolytics (benzodiazepines)
- diminish the intensity of asthma crises

Other promising therapeutic usages:

- attention deficit hyperactivity disorders (ADHD)
- neurodegenerative diseases, dystonia, hyperkinesias
- Parkinson's disease
- Tourette's syndrome
- cancerous brain tumors and certain lung cancers
- the prevention of stomach ulcers and certain diarrheas

- Alzheimer's disease
- autism

The discovery of this *endocannabinoid system* at the dawn of the new millennium represented a breakthrough that has led to renewed research by pharmaceutical companies.

The exact role of endocannabinoids in the human body remains poorly understood, but it appears they play a major role in the management of emotion and in a multitude of physiological functions. As a researcher in 1998 wrote, "The cannabinoids help to reduce pain, control movement, forget painful memories, protect the neurons, and to relax, eat, and sleep."[1]

Now, we have discovered that THC, which had always been the star, is far from being the only therapeutic ingredient in cannabis. Other cannabinoids are being studied, including cannabidiol (CBD), cannabinol (CBN), and cannabigerol (CBG), all of which are devoid of psychotropic activity but act in synergy with THC. The research indicates that these cannabinoids have antibiotic properties; they play a specific role in the regulation of the inflammatory process (specifically of diabetes mellitus and sleep deprivation); they are neuroprotectors; and they even play a protective role against cancer, including against lung cancer in tobacco smokers, as incredible as that may seem. New applications continue to appear, ranging from Tourette's syndrome to Alzheimer's, and from transmissible spongiform encephalopathies all the way to attention deficit disorder (ADD) and autism.

1. Cited by Arno Hazekamp in his excellent thesis *Cannabis; extracting the medicine* published in 2007 by PrintPartners Ipskamp B.V., Amsterdam, Holland (ISBN 978-90-9021997-4).

D.R.

This ninth century manuscript *La Médecine Antique* suggests using hemp to treat frostbite.

Medical marijuana can be a great help to some seriously ill children, especially those battling leukemia or epilepsy.

D.R.

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All Use Is Medicinal

Where does medical use stop? The World Health Organization defines health as "a state of physical and mental well-being."

D.R.

California legalized medical marijuana in 1996, and today we find vending machines like this one, where tobacco, rolling papers, and cannabis rub shoulders.

It is estimated that the police bring in approximately 120,000 marijuana users for questioning every year in France.

For the pharmaceutical industry, the paths of research are rapidly diversifying in their quest for new medications, many of which lie far beyond the traditional uses of hemp.

Sanofi-Aventis, a leader in the pharmaceutical industry, created a medication called Acomplia® (or Zimulti®), which is designed to fight obesity through a molecule that saturates the cannabinoic receptors responsible for the sensation of hunger. This medication seemed to have a promising future, considering that obesity is soaring in industrialized countries and is responsible for four hundred thousand deaths per year in the United States alone. But the push to release it on the market was quickly withdrawn when it was discovered that the molecule in question, while being efficient in limiting appetite (and even for quitting tobacco), also had the seriously inconvenient effect of causing severe depression.

These types of medication are a far cry from the therapeutic usage of hemp flowers, with their hundreds of bioactive compounds working in synergy.

Synthetic Molecules Versus Natural Molecules

In many ways, smoking seems an unlikely way to absorb medicine, yet absorption through the lungs brings immediate results, which allows the patient to precisely gauge the dose needed. However, because smoke contains undesirable and harmful tars, a new method of inhaling cannabis called "vaporization" is increasingly being used. Vaporizers heat the plant material, while maintaining a temperature below the point of combustion. The active agents are then vaporized, in other words transformed into volatile gases so they can be inhaled without also inhaling smoke.

Modern society leans towards chemistry; we have a tendency to place our trust in patented medications rather than in nature herself, forgetting that most modern medications are derived from plants. The days of the herbal apothecary are over.

Therefore, it is all the more remarkable that the right to treat oneself with a plant in its raw state is now being recognized in a growing number of countries, in spite of still being subject to international prohibition.

The first medication based on cannabinoids, Marinol® (based on synthetic THC), was commercialized in 1986 in the United States, to be used against nausea caused by chemotherapy.

Already at that time, numerous patients reported that a marijuana cigarette was more efficient and the dose easier to control than a Marinol® pill, which they also claimed sometimes caused anxiety attacks. Numerous studies have since confirmed that pure THC is an anxiogenic substance; whereas, in the whole plant it is notably tempered by the presence of CBD.

In general, *in vitro* studies as well as clinical tests indicate that THC alone is not as efficient as whole cannabis. Certain companies, such as Bedrocan BV in Holland or G.W. Pharmaceuticals in the United Kingdom, have turned towards what phytotherapists call the *totum*, meaning "the whole plant as designed by nature." Does this mean we are headed towards a paradoxical situation in which free access to marijuana remains forbidden, while pills, sprays, and patches containing its extracts become legally available?

Cannabis Flos produced by Bedrocan BV is, quite simply, composed of cannabis. It is produced in three different dosages (Bedrocan®, Bedrobinol®, Bediol®) and is legally available in Holland, Luxembourg, Finland, Italy, Germany, Bulgaria, Slovenia, and the Czech Republic. Sativex®, developed by G.W. Pharmaceuticals, is a sublingual spray made from the whole plant. It is legally used in the United Kingdom, Spain, and France. In Canada, patients can access raw cannabis cultivated under license by the federal government. Things are shifting rapidly in the United States, and this will have repercussions throughout the world. Ever since the prohibition of hemp by the Senate in 1937, American drug politics have been imposed on all of us through international treaties, as well as every possible additional pressure to ensure compliance.

HEMP SEED OIL, ECZEMA, AND MORE

As if marijuana flowers did not already contain a wide range of therapeutic properties, it has now been discovered that the cold-pressed oil from the seeds of either psychotropic or industrial cannabis is efficient for treating certain conditions that are resistant to conventional medicines.

The properties of hemp seed oil (and even of hemp fiber itself) were well known by the old-time hemp farmers, as one of them recounted a few years ago at the festival of Montjean-sur-Loire in France. "We used to put a few drops of hemp oil on pimples or bug bites and they healed quickly. Even when our dogs or horses lost their hair from mange, it worked well! We also wrapped hemp twine overnight around joints that ached, and the next day we could work again."

Big and fleshy, hemp seeds contain more than 30% oil and about 25% protein. They have always been used as a food, and this continues today, particularly in China and parts of Eastern Europe.

Hemp seed oil, which must be eaten raw, does not contain THC; however, it is remarkably rich in Omega 3 and Omega 6. Furthermore, the omegas are represented in ideal proportions, which is very rare in nature. In fact, only black currant seed oil—available in capsules at drugstores—contains the same optimal profile.

For those suffering from eczema, studies in Finland have shown that taking two teaspoons of hemp oil combined with food every day for two weeks can produce a noticeable improvement.

These studies reinforce numerous personal and anecdotal testimonials, found on the Internet and in health books and magazines, describing the virtues of hemp seed oil for treating various allergic and inflammatory conditions.

President Obama's Gesture

In 1969, the same year as Woodstock, President Nixon launched his War on Drugs. For the next forty years, all the American presidents as well as their European counterparts (except for the practical little country of Holland) remained locked in anti-drug positions. With systematic representation of cannabis as the devil's weed, there could only be mass rejection.

In most Western countries, the laws on narcotics date from the early 1970s, and they have been reinforced many times since then. In France today, someone smoking a joint theoretically risks between one and five years in prison. The simple act of presenting cannabis in a favorable manner is itself punishable by five years of prison. Referring to the beneficial effects cannabis might have on the health of consumers could be a perilous endeavor if the law were to be enforced.

However, this unparalleled repressive arsenal has not succeeded in damming the flow of marijuana into Western society. Cannabis is more available and more frequently consumed than ever before. Seventy million Europeans admit to having smoked it at least once in their lives. In the United States, the prohibition of cannabis has put millions of citizens in prison who were hurting no one but (perhaps) themselves. In 2014, according to the FBI, one marijuana arrest took place every 42 seconds.

With one in every hundred Americans living behind bars, and the cost of incarceration in American jails being one of the highest in the world, the price tag on this repression is insane.

In 1996, California voters, who are always ahead of their times, announced that they were more than 60% in favor of legalizing medical cannabis. The federal government played deaf, stating that individual states are not sovereign in this domain. Over the years, as the number of states passing similar laws has increased, federal agents continued to pursue users of medical marijuana (MM), in spite of the voters who made it legal.

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Medical marijuana consists mainly of female flowers cultivated in the absence of male plants, so they are without seeds. These buds have all the small leaves removed, so that the active ingredients are more concentrated; a single puff of pure herb can be sufficient to produce the desired effect.

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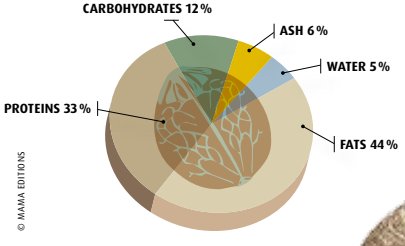
D.R.

Hemp seeds are as rich in protein as soy, and contain more fats than proteins.



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The precious essential fatty acids contained in hemp seeds are protected from light and air by a thick shell.

© JOURNAL OF THE INTERNATIONAL HEMP ASSOCIATION

It was under these conditions, in 2009, that the newly elected Attorney General under President Obama made the game-changing declaration that from then on the federal government would not pursue medical marijuana users, producers, and sellers in states where it was legal.

A simple declaration of this type can have far reaching consequences. It did not take more than that to give birth to the first cannabis coffee shops in Holland forty years ago. Likewise, it didn't take more to end the American prohibition of alcohol that was in place from 1920 to 1933.

As a matter of fact, many observers have remarked on the profound similarities between President Obama's gesture and that of President Roosevelt, which brought an end to Prohibition. Both acts were based on the grassroots frustration of a nation, and both prohibitions failed miserably at their stated goals.

Roosevelt and Obama's decisions have something else in common: they both happened in times of grave economic difficulty. In 1933, at the worst point in the Great Depression, Roosevelt ended Prohibition, replacing it with a tax destined to bail out the nation. With recession now hitting Western countries, economists from all sides are increasingly aware of the profits that could be generated if the legislation operating in California were to be passed elsewhere. It is estimated that in California alone, four hundred thousand people have a medical card allowing them to consume, produce, or purchase cannabis, and 700 dispensaries sell it legally. Almost 60% of California voters are in favor of pure and simple legalization and taxation, not limited to medical usage. It is commonly estimated that legalization could bring in 1.4 billion dollars a year to the California government. On the national scale, legalization could result in annual revenue of seven billion dollars, which would be added to savings of 13.5 billion, the cost of the present repression.

In most cases, the law ratifies changes in popular opinion, rather than preceding them; and this can happen very suddenly. When the fruit is ripe, it falls.

The absurdity of forbidding free access to a safe plant that millions of consumers both need and want will then have ended, at last.

2
From Bhang to Dab: The Different Ways to Absorb Cannabis

MICHKA

Patients whose condition is improved by cannabis are often reduced to preparing their medication themselves. They can choose from a wide variety of ways to do this, and they can also choose one of the many different ways to absorb the product, from traditional to high-tech.

Over the last twenty years, Michka has served several times as a Celebrity Judge at the High Times *Cannabis Cup in Amsterdam. From traditional techniques to modern innovations, she lays out the full inventory of diverse ways that therapeutic cannabis can be transformed and consumed.*

The active agent in cannabis, THC, is concentrated in the flowers, or buds, situated on female plants. They look like dense tufts, and they are pale green. These flowers contain seeds, unless all the male plants in the area have been removed. The technique for growing cannabis with no seeds is widely used in North America and Europe. The name *sinsemilla* is Spanish for "without seeds."