ALASKA LEGISLATURE COMMITTEE FILES 1983-1984 8672

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Above left: A small sampling of the hundreds of paraphernalia products available. Clockwise: Power Hitter which glows in the dark; Fan Can containing a motorized fan; Razor Gun, all of these items are used to force more smoke into the lung. Also shown, a child's toy as a smoking device and a mask to intensify the high associated with pot-smoking.

Above right: A tee shirt popular with pot smokers (also made in childrens and infant sizes) and a Christmas stocking filled with an assortment of paraphernalia.

THE PARAPHERNALIA LAWS

Georgia parents were among the first to recognize the motivational impact of drug paraphernalia upon children and the first to insist that something be done to put a stop to such nonsense. The Georgia paraphernalia laws were passed in early 1977 and were initially upheld (they are currently under appeal) by Federal courts in response to constitutional challenges brought by the paraphernalia industry. Because Georgia's laws resulted in the closing of some 30 head shops in metropolitan Atlanta, they became the model for similar legislation in communities across the country.

As other communities and states adapted Georgia's laws to suit their own needs, a body of legislation accumulated which resulted in a decision by the U.S. Department of Justice, prompted by the White House, to draft a uniform drug paraphernalia act. The task to research and draft such a law fell to the U. S. Drug Enforcement Administration (D.E.A.) which created the Model Drug Paraphernalia Law. D.E.A.'s Model Law has since been passed by hundreds of towns and cities as well as several states. **By November, 1980 eight Federal District Courts had upheld the Model Law as constitutional.** Moreover, five additional District Courts have struck down other paraphernalia laws, and four of these have recommended the Model Law as more appropriate -- and constitutional -- legislation. In at least one important case, the paraphernalia industry appealed a District Court decision which found the Model Law constitutional -- but has since **withdrawn** its appeal, presumably because they felt they did not have a good enough case to win an appeal.

The drug paraphernalia industry's response to the Model Law includes offering its own "model law" which, in a thinly-veiled effort to keep doing business, prohibits sales of its own products to children. Even if such a law could be enforced, the message still remains: Legal drug paraphernalia implies that drugs themselves must be O.K.; moreover, paraphernalia would still be available to kids through mail order ads in drug magazines, or through head shop purchases made by older friends.

Publicly, the paraphernalia industry insists its products have many other uses and therefore cannot be banned from sale. Privately, industry representatives caution manufacturers to avoid **labeling** their products as "drug paraphernalia". The proposed technique.

As Andy Kowl advised in **Accessories Digest (1/80)**, a paraphernalia trade publication, "Anybody who is smart will not be affected by laws banning drug paraphernalia -- just don't sell it, (Meaning anything labeled paraphernalia). You can still sell bongs and clips and all sorts of other novelties and accessories, of course, just no drug paraphernalia". His advice to head shop owners continues, "Pull back now; lay low; and we will weather the storm. It may be peaking now, or soon, and when it blows over, be proud that you did your part to protect the guaranteed rights of Americans."

The industry's legal counsel Michael Pritzker, writing in **Accessories Digest (6/79)** strongly advises paraphernalia manufacturers to disassociate any **mention** of illicit drug use in connection with their products. Such an approach attempts to absolve the paraphernalia industry of any responsibilities for its product.

In spite of the well-financed defense being mounted by the multimillion dollar drug paraphernalia industry, it is encouraging to note that ordinary moms and dads, pooling "grocery money", have already had a sizeable impact in curtailing paraphernalia sales in their communities. It is generally felt that the D.E.A. Model Law is the best one to pass because it is most likely to withstand constitutional challenges. It is a law which has been and is being passed in local communities as well as cities and states throughout the nation. And it is a law which has been "sponsored" by parents.

WHAT YOU CAN DO

A step by step procedure which has been used successfully by individuals and groups throughout the country:

1. Visit a head shop in your community. Ask questions. Buy some samples, particulary "Kiddie Paraphernalia". Educate yourself about drug paraphernalia. Read a copy of **High Times Magazine.**

2. Organize your community. Educate other parents and concerned adults. (See below for publications list to help you get started.)

3. Take your "Bong Show" (your paraphernalia items), plus the **High Times** paraphernalia ads, **plus** the Model Paraphernalia Law to a sympathetic **State Legislator.** Ask him or her to sponsor this law in your state.

Note: This can be just as easy and far more effective, than trying to get the law through at the local level. The community-level law can prove to be wasted energy if, with the same energy and effort, the Model Paraphernalia Law can be passed to cover all communities in your state.

Also send a request to your governor to ask him for his backing for this Model Law. This may be easier than you think. For example, in January 1980 a reporter who regularly covers the Maryland State Legislature said, "In all my 20 years of covering the legislature, I have never seen such enthusiastic support for any bill." (The Maryland State Senate passed this Model Law 47-0. It was signed into law in May 1980.)

Also, it has been proven that the State Senator who introduced this bill received very positive attention in the Press and from the public for doing so. The Senator who introduced the bill in Maryland, for example, said, "I received so much positive attention from sponsoring this bill that if I'd done this when I was a younger, struggling politician, I wouldn't have needed a campaign committee for re-election. This bill received the most enthusiastic public response I've ever had." You can get help from the Drug Enforcement Administration, including a free packet of supplemental materials (briefs prepared to defend the Model Law and various Federal court opinions handed down to date). Be sure to give copies **at once** to the attorney who will be defending the law case. Write or call:

William Lenck, Chief Counsel (202-633-1276) or
Harry Myers, Attorney (202-633-1404)
Drug Enforcement Administration
1405 Eye Street NW
Washington DC 20537

4. In addition, write for materials. Several parent groups have published what they did to fight drug paraphernalia sales in their town, cities and states. These include:

A. How to Form A Families In Action Group In Your Community. 164 page manual tells how to organize your community to do something about paraphernalia, kids, and drugs. Includes copies of Georgia's laws. $10 single copies, $9 each for 2 to 5 copies, $8 each for 6 or more copies. Send check or money order to Families in Action, P.O. Box 15053, Atlanta, GA 30333. Also available at the same address: Quarterly Newsletter, $3 for four issues.

B. Stop the Drug Epidemic In Your Community with Effective Practical Action.
Pamphlet tells how to organize to fight paraphernalia. $3 each. Send check or money order to Interstate Movement Against Dangerous Drugs, P.O. Box 6272, Silver Spring, MD 20906

C. Paraphernalia Information Packet. $1.00
Send check or money order to Millburn Conference of Parents and Teachers, 23 Audubon Court, Short Hills, NJ 07078

D. Anne Arundel Drug & Alcohol Program
Brochure & Newsletter Free. Write to Ann Arundel Drug & Alcohol Program, 4112 Arundel Center, Annapolis, MD 21401.

The National Federation of Parents for Drug-Free Youth (N.F.P.), a coalition of some 600 parents groups throughout the nation, was formed last Spring. Additional information about children and drugs, and what **you** can do to reduce drug use by children, can be found in N.F.P.'s publication list.

You might also want to contact Gerri Silverman, N.F.P.'s Drug Paraphernalia Committee Chairman, and N.F.P.'s attorney, Jill Gerstenfield, for additional information and a copy of an Amicus Curiae brief filed in behalf of the Federation in a Federal Court test of Maryland's drug paraphernalia law. Write to the National Federation of Parents, P.O. Box 57217, Pennsylvania Ave., Washington, D.C. 20037

5. At least two United States Congressional Committees have held hearings on drug paraphernalia. These are:

The U.S. Select Committee on Narcotics Abuse and Control
(November 1979)
Room 3287
House Office Building Annex 2
Washington DC 20515
Write for a free copy of the transcript.

The U.S. Senate Criminal Justice Subcommittee
Committee on the Judiciary
Washington DC 20510
Write to Senator Charles Mathias, Chairman of the Committee, for a free copy of the transcript.

6. By November 1980 nine states passed the Model Law: Connecticut, Delaware, Indiana, Louisiana, Maryland, Nebraska, New Jersey, New York, Florida. **Note:** If your state has passed the Model Law, this does not mean that drug paraphernalia is not being sold in your community. Because paraphernalia is such a profitable business, the paraphernalia merchants have a large legal fund, and all anti-drug paraphernalia laws are routinely challenged in Federal Court to delay their implementation. Thus far, only Delaware has completed it's court proceedings under the Model Law. (Georgia is also closing down head shops under a law which predates the Model Law.)

If you are in one of the remaining eight states where the law has passed both houses and has been signed by the Governor: (a) Phone the State Attorney General's office and find out the "progression" of the law suit. Frequent calls and numerous letters will encourage the State Attorney General to aggressively defend the legislation in court. For example,

Continued on last page

MODEL DRUG PARAPHERNALIA LAW

The Uniform Controlled Substances Act, drafted by the National Conference of Commissioners on Uniform State Laws, has been enacted by all but a handful of states. The Uniform Act does not control the manufacture, advertisement, sale or use of so-called "drug paraphernalia." Other state laws aimed at controlling drug paraphernalia are often too vaguely worded and too limited in coverage to withstand constitutional attack or to be very effective. As a result, the availability of drug paraphernalia has reached epidemic levels. An entire industry has developed which promotes, even glamorizes, the illegal use of drugs by adults and children alike. Sales of drug paraphernalia are reported to be more than a billion dollars a year. What was a small phenomenon at the time the Uniform Act was drafted has now mushroomed into an industry so well entrenched that it has its own trade magazines and associations.

This Model Act was drafted, at the request of state authorities, to enable states and local jurisdictions to cope with the paraphernalia problem. The act takes the form of suggested amendments to the Uniform Controlled Substances Act. The Uniform Act is extremely well organized. It contains a definitional section, an offenses and penalties section, a civil forfeiture section, as well as miscellaneous sections on administration and enforcement. Instead of creating separate, independent paraphernalia laws, it seems desirable to control drug paraphernalia by amending existing sections of the Uniform Controlled Substances Act.

Article I provides a comprehensive definition of the term "drug paraphernalia" and includes particular descriptions of the most common forms of paraphernalia. Article I also outlines the more relevant factors a court or other authority should consider in determining whether an object comes within the definition.

Article II sets out four criminal offenses intended to prohibit the manufacture, advertisement, delivery or use of drug paraphernalia. The delivery of paraphernalia to a minor is made a special offense. Article II clearly defines what conduct is prohibited, and it specifies what criminal state of mind must accompany such conduct.

(TEAR OFF AT PERFORATION)

Article I

(Definitions)

SECTION (insert designation of definitional section) of the Controlled Substances Act of this State is amended by adding the following after paragraph (insert designation of last definition in section):

"( ) The term 'drug paraphernalia' means all equipment, products and materials of any kind which are used, intended for use, or designed for use, in planting, propagating, cultivating, growing, harvesting, manufacturing, compounding, converting, producing, processing, preparing, testing, analyzing, packaging, repackaging, storing, containing, concealing, injecting, ingesting, inhaling, or otherwise introducing into the human body a controlled substance in violation of this Act (meaning the Controlled Substances Act of this State). It includes, but is not limited to:

(1) Kits used, intended for use, or designed for use in planting, propagating, cultivating, growing or harvesting of any species of plant which is a controlled substance or from which a controlled substance can be derived;

(2) Kits used, intended for use, or designed for use in manufacturing, compounding, converting, producing, processing, or preparing controlled substances;

(3) Isomerization devices used, intended for use, or designed for use in increasing the potency of any species of plant which is a controlled substance;

(4) Testing equipment used, intended for use, or designed for use in identifying or in analyzing the strength, effectiveness or purity of controlled substances;

(5) Scales and balances used, intended for use, or designed for use in weighing or measuring controlled substances;

(6) Diluents and adulterants, such as quinine hydrochloride, mannitol, mannite, dextrose and lactose, used, intended for use, or designed for use in cutting controlled substances;

(7) Separation gins and sifters used, intended for use, or designed for use in removing twigs and seeds from, or in otherwise cleaning or refining marijuana

(8) Blenders, bowls, containers, spoons and mixing devices used, intended for use, or designed for use in compounding controlled substances;

(9) Capsules, balloons, envelopes and other containers used, intended for use, or designed for use in packaging small quantities of controlled substances;

(10) Containers and other objects used, intended for use, or designed for use in storing or concealing controlled substances;

(11) Hypodermic syringes, needles and other objects used, intended for use, or designed for use in parenterally injected controlled substances into the human body;

(12) Objects used, intended for use, or designed for use in ingesting, inhaling, or otherwise introducing marijuana, cocaine, hashish, or hashish oil into the human body, such as:

(a) Metal, wooden, acrylic, glass, stone, plastic, or ceramic pipes with or without screens, permanent screens, hashish heads, or punctured metal bowls;
(b) Water pipes;
(c) Carburetion tubes and devices;
(d) Smoking and carburetion masks;
(e) Roach clips: meaning objects used to hold burning material, such as a marijuana cigarette, that has become too small or too short to be held in the hand;
(f) Miniature cocaine spoons and cocaine vials;
(g) Chamber pipes;
(h) Carburetor pipes;
(i) Electric pipes;
(j) Air-driven pipes;
(k) Chillums;
(l) Bongs;
(m) Ice pipes or chillers;

In determining whether an object is drug paraphernalia, a court or other authority should consider, in addition to all other logically relevant factors, the following:

(1) Statements by an owner or by anyone in control of the object concerning its use;
(2) Prior convictions, if any, of an owner, or of anyone in control of the object, under any State or Federal law relating to any controlled substance;

Continued from page 5

(3) The proximity of the object, in time and space, to a direct violation of this Act;
(4) The proximity of the object to controlled substances;
(5) The existence of any residue of controlled substances on the object;
(6) Direct or circumstantial evidence of the intent of an owner, or of anyone in control of the object, to deliver it to persons who he knows, or should reasonably know, intend to use the object to facilitate a violation of this Act; the innocence of an owner, or of anyone in control of the object, as to a direct violation of this Act should not prevent a finding that the object is intended for use, or designed for use as drug paraphernalia;
(7) Instructions, oral or written, provided with the object concerning its use;
(8) Descriptive materials accompanying the object which explain or depict its use;
(9) National and local advertising concerning its use;
(10) The manner in which the object is displayed for sale;
(11) Whether the owner, or anyone in control of the object, is a legitimate supplier of like or related items to the community, such as a licensed distributor or dealer of tobacco products;
(12) Direct or circumstantial evidence of the ratio of sales of the object(s) to the total sales of the business enterprise;
(13) The existence and scope of legitimate uses for the object in the community;
(14) Expert testimony concerning its use."

Article II
(Offenses and Penalties)

SECTION (designation of offenses and penalties section) of the Controlled Substances Act of this State is amended by adding the following after (designation of last substantive offense):

"SECTION (A) (Possession of Drug Paraphernalia)

It is unlawful for any person to use, or to possess with intent to use, drug paraphernalia to plant, propagate, cultivate, grow, harvest, manufacture, compound, convert, produce, process, prepare, test, analyze, pack, repack, store, contain conceal, inject, ingest, inhale or otherwise introduce into the human body a controlled substance in violation of this Act. Any person who violates this section is guilty of a crime and upon conviction may be imprisoned for not more than ( ), fined not more than ( ), or both."

"SECTION (B) (Manufacture or Delivery of Drug Paraphernalia)

It is unlawful for any person to deliver, possess with intent to deliver, or manufacture with intent to deliver, drug paraphernalia, knowing, or under circumstances where one reasonably should know, that it will be used to plant, propagate, cultivate, grow, harvest, manufacture, compound, convert, produce, process, prepare, test, analyze, pack, repack, store, contain, conceal, inject, ingest, inhale, or otherwise introduce into the human body a controlled substance in violation of this Act. Any person who violates this section is guilty of a crime and upon conviction may be imprisoned for not more than ( ), fined not more than ( ), or both."

"SECTION (C) (Delivery of Drug Paraphernalia to a Minor)

Any person 18 years of age or over who violates Section (B) by delivering drug paraphernalia to a person under 18 years of age who is at least 3 years his junior is guilty of a special offense and upon conviction may be imprisoned for not more than ( ), fined not more than ( ), or both."

"SECTION (D) (Advertisement of Drug Paraphernalia)

It is unlawful for any person to place in any newspaper, magazine, handbill, or other publication any advertisement, knowing, or under circumstances where one reasonably should know, that the purpose of the advertisment, in whole or in part, is to promote the sale of objects designed or intended for use as drug paraphernalia. Any person who violates this section is guilty of a crime and upon conviction may be imprisoned for not more than ( ), fined not more than ( ), or both."

Article III
(Civil Forfeiture)

SECTION (insert designation of civil forfeiture section) of the Controlled Substances Act of this State is amended to provide for the civil seizure and forfeiture of drug paraphernalia by adding the following after paragraph (insert designation of last category of forfeitable property):

"( ) all drug paraphernalia as defined by Section ( ) of this Act."

Article IV
(Severability)

If any provision of this Act or the application thereof to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of the Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are severable.

This reprint of **The Model Drug Paraphernalia Law** has been sponsored by The Committees of Correspondence which is a national group of citizens concerned about drug abuse.

COMMITTEES OF CORRESPONDENCE
P.O. Box 1590
Cathedral Station
New York, N.Y. 10025

In the days of our nation's youth, the Committees of Correspondence was formed to exchange information and ideas and to build Colonial unity. Today, the health and strength of our nation's youth are being threatened by the pervasive drug abuse pandemic. And the Committees of Correspondence has been revived to help effect a turnaround.

Growth of Drug Paraphernalia Industry And Growth of Illicit Drug Use

LIFETIME PREVALENCE -- THOSE WHO HAVE EVER USED:	YOUTH ‡ Age 12 to 17		HIGH SCHOOL SENIORS ‡ Age 17 and 18		YOUNG ADULTS ‡ Age 18 to 25	
	1972	1979	1975*	1979	1972	1979
MARIJUANA	14%	30.9%	47.3%	60.4%	47.9%	68.2%
COCAINE	1.5%	5.4%	9%	15.4%	9.1%	27.5%
INHALANTS	6.4%	9.8%	-	18.7%	-	16.5%
HALLUCINOGENS	4.8%	7.1%	16.3%	18.6%	-	25.1%
TRANQUILIZERS	3%	4.1%	17%	16.3%	7%	15.8%
SEDATIVES	3%	3.2%	18.2%	14.6%	10%	17%
STIMULANTS	4%	3.4%	22.3%	24.2%	12%	18.2%
HEROIN	6%	.5%	2.2%	1.1%	4.6%	3.5%

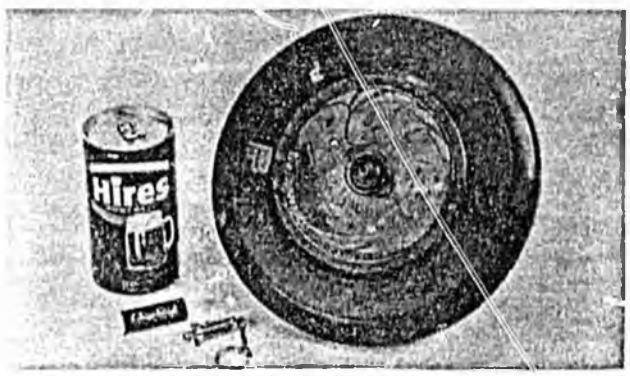
Categories of drugs are listed in descending order **in relationship to the number of paraphernalia products designed for specific drugs.** For example, the largest number of drug paraphernalia products are designed to augment marijuana use, the second largest number of products for cocaine use, etc. At the other end of the spectrum, devices to assist heroin use are infrequent among industry products.

The beginning of the drug paraphernalia industry can be traced to the invention of "E-Z Wider" Rolling Papers, the first rolling paper to be specifically designed for marijuana. A $6,000 investment by "E-Z Wider's" inventor in 1972 grew to a $9,000,000 conglomerate in just six years. Two years later, **High Times Magazine** began publication and advertised paraphernalia products to a mass audience of consumers.

‡ From **A Drug Retrospective: 1962 to 1980** and **Drugs and the Nation's High School Students, 1979 Highlights,** both published by the National Institute on Drug Abuse, (U.S. Department of Health and Human Services), 5600 Fishers Lane, Rockville, MD 20857

- Not tabulated

• First year high school senior survey began



Above: Pictured are some ordinary products that could be found anywhere. None of which would arouse the least suspicion.

Right: These same products, modified, show how they are used to conceal illicit drugs.

Clockwise from top left: a soft drink can with a removable top, a product to look like a "Frisbee" called a Buzz Bee used as a smoking device, a roach clip concealed in a knife case, a tube of lip balm with a removable cap to conceal a glass vial.

MORE ADS continued from page 2

Top: Regular monthly feature Trans High and, left, a feature article on the use of short-wave radio to avoid detection by Law Enforcement Authorities.

Subscription Form

The Committees of Correspondence is a national organization of citizens concerned about drug abuse. For a one-year (10 issues) subscription to the Drug Abuse Issue of the Month, send $5.00 (cash, check or money order) to: Committees of Correspondence, P.O. Box 1590, Cathedral Station, New York, N.Y. 10025

Name _____
(please print)

Address _____
(please print)

City _____ State _____ Zip _____

Continued from page 4

in Maryland, the Attorney General assigned three top lawyers to the case; one a specialist in research and writing; one a specialist in gathering evidence and organizing the litigation; the third an experienced "trial lawyer". A few other Attorney Generals have given the litigation "less than their best possible support". **Your expression of interest can make the difference.**

When you learn the status of the bill in your state, take this memo to your local newspaper. Ask them to do an editorial or story. (Some papers seem to have a pro-paraphernalia viewpoint. If yours falls into this category and the reporting is slanted or incorrect, write to the newspaper, encouraging them to print the facts from this newsletter in order to set the record straight. The more letters which come in, the more likely it is that one of them will be printed.)

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BULK RATE
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There's been a lot of confusion about marijuana. Many years ago, exaggerated stories of the drug's bizarre effects, including tales of violence, amnesia, and sexual frenzy, began to circulate widely. When scientists found no evidence to confirm these rumors, many people began to reject reports of any bad effects of marijuana —and what was considered the "devil's weed" gained a reputation for being a "safe" drug.

This section examines the myths and facts about marijuana. Some of the information may surprise both you and your children. We still do not know everything we would like to know about this controversial drug. But as you will see, our present evidence clearly indicates that it is not a "safe" substance.

Marijuana: What It Is and What It Does

What Exactly Is Marijuana?

Marijuana (also called pot, grass, reefer, or weed) comes from a plant, with the botanical name of *Cannabis sativa*, that grows wild and is cultivated in many parts of the world. Containing over 400 chemicals, this plant has the ability to intoxicate its users, primarily because of the psychoactive or mind-altering ingredient called delta-9-tetrahydrocannabinol, or THC. It is the THC content, found at various concentrations in different parts of the plant, which determines the potency. And the THC content is controlled by plant strain, climate, soil conditions, and harvesting.

Typically, the marijuana used in cigarettes (joints) is made from dried particles of the whole plant except the main stem and roots. In 1975, the average confiscated sample of marijuana contained 0.4 percent THC; in 1979, the average THC content was about 4 percent—a tenfold increase. Sinsemilla, a cultivated form of marijuana which is becoming more frequently available in this country, may contain as much as 7 percent THC.

Hashish (hash) is a green, dark brown, or black resin extracted from the *Cannabis sativa* plant and smoked to produce a high. In the past, hashish, which averages about 2 percent THC, contained more THC than marijuana. However, with the increased potency of marijuana on the streets, it now frequently is stronger than hashish.

Hash oil is an extract of the *Cannabis sativa* plant. It may contain up to 30 percent THC, many times the amount found in marijuana. Hash oil is a tarlike substance usually smoked in small amounts on tobacco or marijuana cigarettes or in small glass pipes.

How Do People Feel When They Smoke Marijuana?

Feelings of euphoria and relaxation are commonly reported as the result of smoking moderate amounts of marijuana. Physically, users experience an increase in heart and pulse rate, a reddening of the eyes, a dryness in the mouth and throat, a mild decrease in body temperature, and, on occasion, a sudden appetite. High doses may result in image distortions and hallucinations.

Many users claim that marijuana enhances their hearing, vision, and skin sensitivity, but these reports have not been confirmed by researchers. Studies of marijuana's mental effects have shown that the drug temporarily impairs short-term memory, alters the sense of time, and reduces the ability to perform tasks requiring concentration, swift reactions, and coordination.

Do People Ever React Badly to Marijuana?

Yes. The most common adverse reaction to marijuana is a state of anxiety, sometimes accompanied by paranoid thoughts; these can range from general suspicion to a fear of losing control and going crazy. Acute anxiety reactions are usually experienced by novice users, and the symptoms generally disappear in a few hours as the drug's effects wear off. While anxiety reactions can usually be quieted by simple reassurance, some marijuana users may need professional help. Over 11,000 emergency room visits relating to marijuana use were reported in 1979.

Can Marijuana Cause Mental or Psychological Problems?

Marijuana does not directly cause mental problems, but like many other drugs, it appears to bring to the surface emotional problems and can even trigger more severe disorders, particularly schizophrenia. People suffering from depression or other emotional disturbances who use marijuana to treat their symptoms often cause a worsening of the problem. An estimated 5,000 people seek professional treatment every month for problems related to marijuana.

How Can Marijuana Affect Your Child?

In addition to the physical effects described later, a very real danger in marijuana use is its possible interference with growing up. As research shows, the effects of marijuana can interfere with learning by impairing thinking, reading comprehension, and verbal and arithmetic skills.

Scientists also believe that the drug may interfere with the development of adequate social skills and may encourage a kind of psychological escapism. Young people need to learn how to make decisions, to handle success, to cope with failure, and to form their own beliefs and values. By providing an escape from "growing pains," drugs can prevent young people from learning to become mature, independent, and responsible.

How Much Is Heavy Marijuana Use?

For the purposes of this booklet, heavy use is defined as smoking at least once a day. However, many young

people when asked to define heavy use say that it means smoking three or more times a day.

What Is Marijuana "Burn Out"?

"Burn out" is a term first used by marijuana smokers themselves to describe the effect of prolonged use. Young people who smoke marijuana heavily over long periods of time can become dull, slow moving, and inattentive. These burned-out users, also referred to as "vegged out" or "space cadets," are sometimes so unaware of their surroundings that they do not respond when friends speak to them. Such youngsters, however, do not consider themselves to be burned out. Scientists believe that burn out may be a sign of drug-related mental impairment that may not be completely reversible, or is reversible only after months of abstinence.

Can Marijuana Cause Addiction?

While increasing numbers of people are reporting problems associated with their marijuana use, and many are having problems stopping after heavy or long-term use, there is little evidence that the drug is physically addicting. Animal studies have shown, however, that a tolerance to THC can develop. This means more and more marijuana must be used over time to achieve the high once experienced by using smaller amounts.

Does Marijuana Lead to the Use of Other Drugs?

There is nothing in marijuana itself that causes people to use other drugs. While studies have shown that the use of tobacco and alcohol often precedes marijuana use, the overwhelming majority of marijuana smokers do not go on to use other drugs. But some do; surveys show that the earlier marijuana use begins, the more likely it is that the use will be heavy. Early use also increases the likelihood of subsequent experimentation with other drugs such as hashish, hallucinogens, cocaine, amphetamines, and occasionally barbiturates and heroin.

How Are People Introduced to Marijuana?

Most people are introduced to marijuana by their peers—that is, by people their own age, usually acquaintances or friends. Pushers are rarely involved when a person first smokes marijuana.

How Many People Smoke Marijuana?

Over 50 million Americans have tried marijuana at least once. Approximately 22 million were considered current users at the time of the last national survey in 1979—"current" because they reported smoking marijuana during the month preceding the survey.

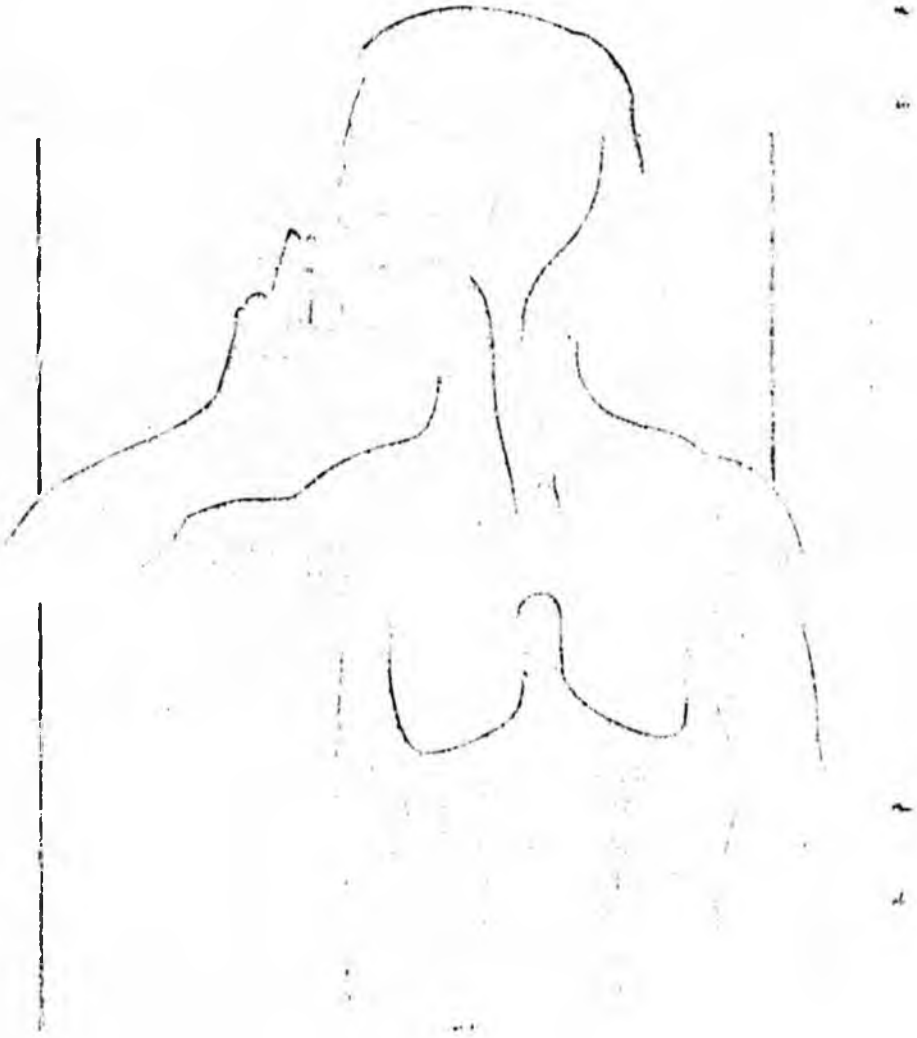
A breakdown of teenage marijuana use shows that—

60 percent of high school seniors had tried it, and one out of nine was a daily user;

8 percent of the 12- to 13-year-olds reported that they had smoked marijuana at least once, and half of this group were current users; and

32 percent of the 14- to 15-year-olds had tried it, and 17 percent were still using it.

While children under the age of 12 were not surveyed, many in the 12-to-17 age group report that they first tried marijuana, and even started smoking it regularly, while they were still in grade school—and probably before their parents even suspected they knew about the drug.

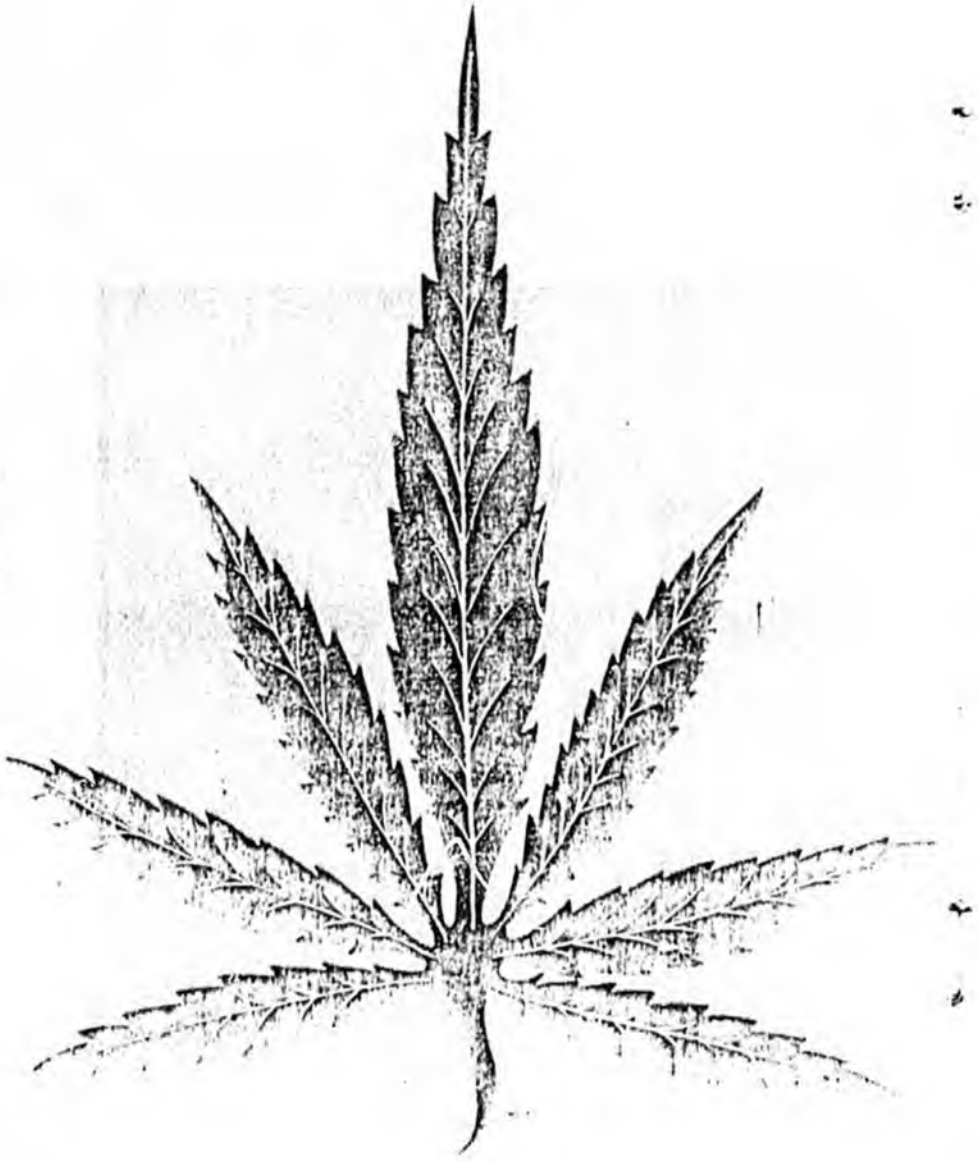


What Happens if You Drive After Smoking Marijuana?

Marijuana delays a person's response to sights and sounds—so that it takes a driver longer to react to a dangerous situation. The ability to perform sequential tasks can also be affected by smoking marijuana. As a result, a marijuana smoker's biggest driving problems occur when faced with unexpected events, such as a car approaching from a side street or a child running out from between parked cars. The greater the demands of a driving situation, the less able the marijuana user will be to cope. The driver who doesn't feel high may still be under the influence of marijuana since its effects may last for several hours after the high has passed.

The combined use of marijuana and alcohol is more hazardous than the use of either alone. But combined use is becoming widespread; one researcher reported that nearly half of regular marijuana users combine

alcohol with marijuana use. Surveys have indicated that from 60 to 80 percent of marijuana users sometimes drive while high.



Marijuana's Effects on the Body

Most of the information on marijuana's effects on the body has been established through studies on both humans and animals, some only by research on animals. Stringent U.S. drug-testing laws require that most research be conducted on men over 18; very few studies have involved women, and none have used adolescents.

Marijuana research is relatively new by scientific standards. Many more years and additional studies will be needed before the long-term effects of marijuana use are fully known.

How Long Does Marijuana Stay in the Body After It Is Smoked?

When marijuana is smoked, THC, its active ingredient, is absorbed by many tissues and organs in the body. The body, in its attempt to rid itself of the foreign chemical, chemically transforms the THC into metabolites. Human tests on blood and urine can detect THC metabolites up to a week after marijuana is smoked. Tests involving radioactively labeled THC have traced these metabolites in animals for up to a month.

Can Marijuana Cause Brain Damage?

To date, no definitive neurological study of humans has turned up evidence of marijuana-related permanent brain damage. However, in a recent study of rhesus monkeys, the animals were trained to smoke a marijuana cigarette 5 days a week for 6 months. The researcher reported that persistent changes in the structure of the monkeys' brain cells followed.

This and other studies have led researchers to conclude that the possibility of subtle and lasting changes in brain function from heavy and continuous marijuana use cannot be ruled out.

How Does Marijuana Affect the Heart?

Marijuana use increases the heart rate as much as 50 percent and can bring on chest pain in people already experiencing a poor blood supply to the heart. For this reason, doctors believe that people with heart conditions, or those who are at high risk for heart ailments, should not use marijuana.

How Does Marijuana Affect the Lungs?

Scientists believe that marijuana can be particularly harmful to the lungs because some users inhale the unfiltered smoke deeply and hold it in their lungs as long as possible, thereby keeping the smoke in contact with lung tissue for prolonged periods. Repeated inhalation of smoke, whether marijuana or tobacco, inflames the lungs and affects pulmonary functions. In one study on humans, it was found that smoking five joints a week over time is more irritating to the air passages and impairs the lungs' ability to exhale air than smoking almost six packs of cigarettes a week. Another study on animals using THC levels similar to daily human use found that extensive lung inflammation developed after 3 months to a year of use.

Can Marijuana Cause Cancer?

While marijuana smoke has been found to contain more cancer-causing agents than tobacco smoke, there is no direct evidence so far that marijuana can cause cancer in humans. However, biopsies of human lung tissue

chronically exposed to marijuana smoke in a laboratory showed cellular changes called metaplasia that are considered precancerous. In laboratory tests, the tars from marijuana smoke have produced tumors when applied to animal skin.

Does Marijuana Affect the Body's Ability To Fight Infection?

This question remains unresolved. Some reports suggest that white cell formation central to the body's immune response is affected by heavy marijuana smoking. Some laboratory animal studies have found that the immune response is significantly suppressed in mice and rats subjected to high doses of marijuana. Other studies have not confirmed these findings. Because the immune response is so important to good health, long-term studies are essential to determine if marijuana users become more susceptible to disease.

How Does Marijuana Affect the Hormonal and Reproductive Systems?

MEN

A few studies of adult males have found that chronic marijuana users had lower levels of testosterone (the principal male sex hormone) than nonusers, and that abstention from marijuana after heavy use produced a reversal of this condition. Other research has shown that the sperm count in young adult males diminishes as marijuana use increases. Still other studies have shown that some of the sperm of chronic marijuana users are defective and nonfunctional. On the basis of these findings, scientists feel that those with marginal fertility or endocrine functioning should avoid marijuana. In addition, marijuana has been shown to affect the growth hormone from the pituitary. These findings indicate that marijuana may be particularly harmful during adolescence, a period of rapid physical and sexual development.

WOMEN

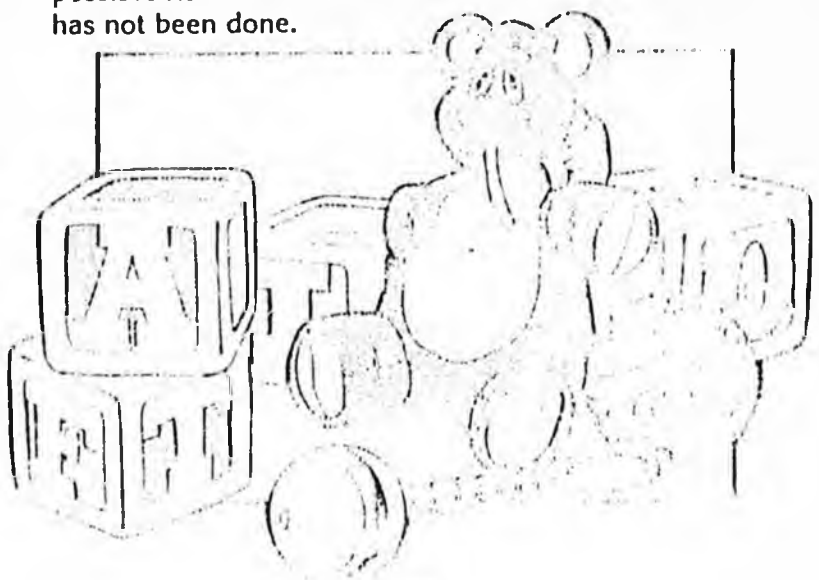
Information about the reproductive effects of marijuana on women is scarce; marijuana research on women of childbearing age is not permitted because of possible reproductive risks. But one recent study of marijuana use and human female endocrine functioning with 26 women using street marijuana for 6 months or more found they had defective menstrual cycles three times more frequently than a similar group of nonusers. These defective cycles involved either a failure to ovulate or a shortened period of fertility—findings which suggest that regular marijuana use may reduce fertility in women. Many female animal studies have been completed and show that marijuana influences levels of estrogen, the principal female sex hormone, and progesterone, another reproductive hormone, as well as the growth hormone from the pituitary. These studies suggest that heavy use should be avoided by the physically and sexually developing adolescent girl.

Is It OK To Smoke Marijuana if You Are Pregnant?

Definitely not. As stated earlier, research on women is limited because of possible risks to the unborn child. Laboratory animal tests, however, have shown that THC-treated female monkeys were four times more likely than untreated monkeys to abort or have stillborn infants. And males born of the THC-treated monkeys were lighter than usual in birth weight. Scientists believe that marijuana, which crosses the placental barrier in the pregnant mother's womb, may have a toxic effect on embryos and fetuses. Use of marijuana or any other drug during pregnancy is an unnecessary risk.

What About Breast Feeding?

Animal studies have shown that THC from marijuana can be transmitted to a baby through the mother's milk and that traces of THC have been found in the baby's urine and feces after nursing. Scientists have no doubt that THC is also transmitted in human milk, but because of possible risks to the mother and child, human research has not been done.



Possible Medical Uses of the Chemicals in Marijuana

Research on marijuana has led to findings which indicate that some of the plant's chemicals, particularly THC, may have medical value. The following summarizes those areas currently being investigated.

Open-Angle Glaucoma

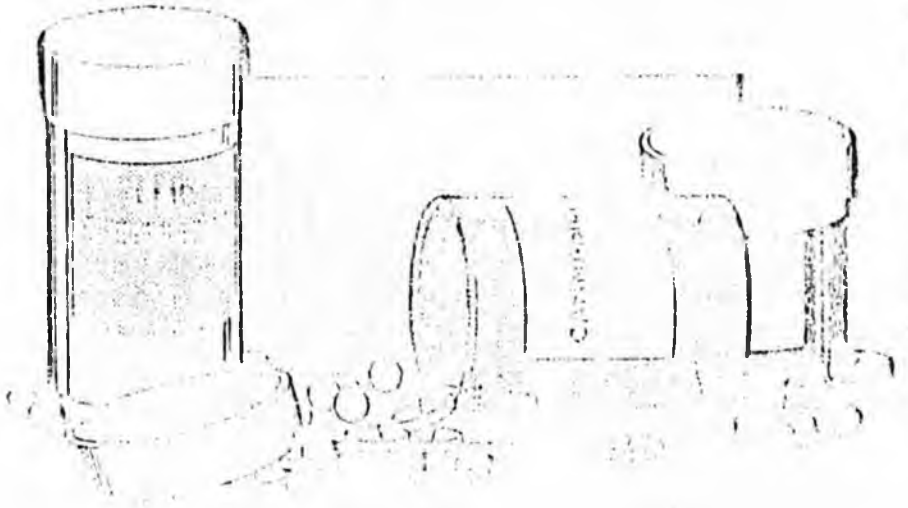
One of the first potential medical uses of marijuana to be explored was the treatment of open-angle glaucoma. This disease, which often leads to blindness, is caused by pressure within the eye. Marijuana cigarettes, often in combination with standard eye medication, have sometimes reduced this pressure. Synthetically made THC eye drops are also being tested on patients. However, mounting evidence suggests that tolerance (the need to increase amounts to achieve the effects produced by initial doses) develops and that ultimately little or no effect may be realized from the drug.

Use of marijuana does not prevent glaucoma or any other eye disorder, or improve vision.

Nausea

One of the more promising uses of THC is as a means of controlling the overwhelming nausea and vomiting which cancer patients experience during chemotherapy. These side effects sometimes force patients to discontinue necessary treatment. Because the available substances that control these symptoms are not effective for all patients, several research projects are now being sponsored by the Federal Government and a number of States and independent researchers to further investigate THC's anti-nausea effects.

But marijuana does not prevent cancer. As discussed earlier, marijuana smoke contains more cancer-causing agents than tobacco smoke.



Multiple Sclerosis

Some small studies are being conducted to test whether THC has any effect on reducing spasticity or involuntary muscle contractions in patients with multiple sclerosis. While the results are not conclusive, some patients have shown lowered spasticity after taking the drug. Whether this reduction will make any difference in the patients' ability to function is not yet known.

Epilepsy

A number of human and animal studies have been done to determine if marijuana or any of its ingredients has an effect on epileptic seizures. Some research on THC has shown that it may actually trigger convulsions in epileptics. Scientists hypothesize that this occurs when the drug stimulates high voltage brain waves, and that the likelihood of its happening is determined by the amount of THC in marijuana and the amount inhaled.

Another marijuana ingredient, cannabidiol, has been shown in limited studies to reduce or control seizures. It should be pointed out, however, that cannabidiol is dominant in only one strain of marijuana and that this particular "fiber" strain contains little of the mind-altering THC. This means that the marijuana available for sale on the street contains only trace amounts of cannabidiol. Cannabidiol has been synthesized and is administered orally or by injection to patients involved in studies.

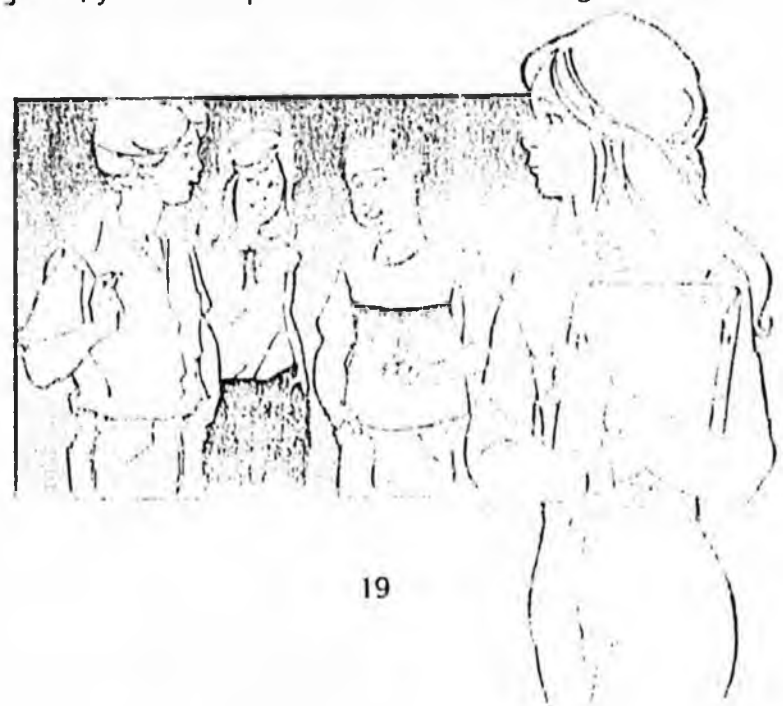
What's a Parent To Do?

Sooner or later, nearly all youngsters find themselves in situations in which they must decide whether or not to take drugs. These decisions are especially hard to make in the midst of conflicting information, peer pressure, curiosity, and the many other influences that are part of adolescence.

If your child has not tried marijuana, consider yourself fortunate, but do not discount the possibility that it could happen sometime in the future. Learn the facts and be prepared to answer questions or deal with the situation if it should occur.

If you think your child has tried marijuana and may even be smoking it regularly, remain calm. Outbursts of anger and emotion are not going to help. They will only interfere with the dialog that is now essential. If you find yourself unable to control your feelings, consider bringing in a third party whose advice and counsel will be respected by both you and your child.

If your child was the one who told you about using marijuana, you should praise him or her for being honest.



and be proud that you created the atmosphere that encouraged your child to confide in you. As you discuss marijuana with your son or daughter, try to find out why s/he smokes and how often. The reasons most often cited are, "Because everybody else does" or "It makes me feel good." A closer look may reveal that your child smokes marijuana to avoid rejection by the other kids, to overcome shyness, or to cope with boredom or feelings of failure.

If you suspect your child may be smoking marijuana to get your attention, take a look at your relationship. Perhaps spending more time with your child is called for. Consider planning activities together away from home, school, and business pressures. Try listening and becoming sensitive to your child's feelings and problems, no matter how trivial they seem.

If your child smokes heavily, you might point out the dangers of heavy use and consider seeking help from a doctor or other health professional even if you have to do this without the youngster's consent.

Saying "No"

A recent study with adolescents has shown that teaching them how to say "no" may actually be more important than giving them the reasons for saying it. Since peer pressure is so important in drug use, you might consider teaching your child how to handle the time when s/he will be faced with making a decision about marijuana or other drugs.

Guilt Doesn't Help

Don't feel guilty or ashamed about your child's marijuana use. Even children of loving parents who have set a good example and taught moderation can become caught up in drug use. Peer group pressure is often strong enough to override the best parental influences.

As you try to cope with the "hows" and "whys" of marijuana, it is important to remember that children are not the only ones who have peers. Your own friends, your neighbors, and the parents of your child's friends are facing the same problems and asking the same questions.

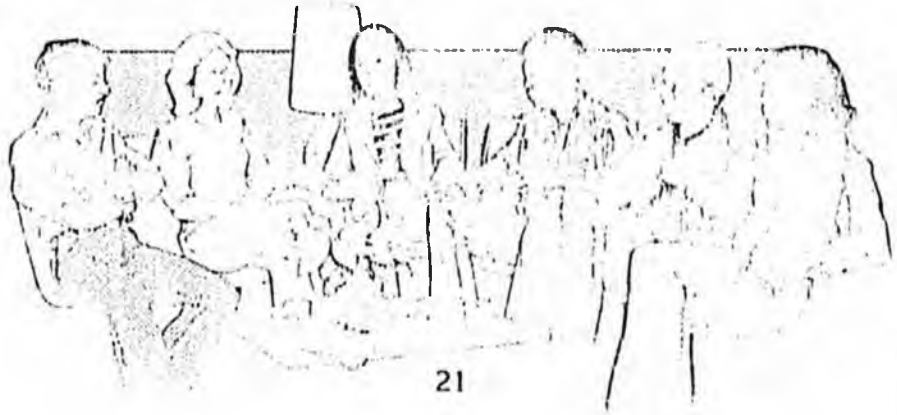
In fact, parents all over the country—of every race, ethnic background, and social class, in cities and suburbs and small towns—are waking up to the dangers of marijuana and other drugs.

Talk About Drugs With Other Parents

If you know your child's friends are smoking marijuana and you would like to do something to stop it, start by inviting their parents to your home one evening. Tell them of your concerns and share all the information you have. Some will probably report similar experiences and may be relieved to find someone who shares their troubles and will work with them to look for solutions.

Some parents may become defensive and insist that marijuana use is not a problem in their families. This is a natural reaction for people who are frightened and confused. For many, a stigma is still attached to marijuana use. They believe that drugs are used only by "bad" children of "unfit" parents.

At any parent meeting try to avoid accusations and blame—"your child does this," "well, *your* child does that." Remember that the purpose of a parent group is cooperation and sharing.



Establish Uniform Rules for the Peer Group

An approach some parents have tried is establishing uniform rules to make access to drugs harder. If you and the parents of your child's friends can agree on appropriate curfews, limits on spending money and use of the family car, and other guidelines, the young people in your community will not be able to justify or excuse their behavior by saying, "But all the other kids are allowed to!" This will also help develop a sense of an extended family in the community where the parents cooperate and the young people are treated alike.

Parent groups that have tried this approach report that:

> Their children seem more active and attentive, and their grades improve.
>
> Their youngsters are now voluntarily following rules that they used to think were unreasonable.
>
> The parent-child relationship is better than ever.
>
> Younger children are not falling into the same drug-oriented culture which influenced their older brothers and sisters.

Develop Alternatives to Drug Use

There are any number of healthy activities which can show your child how to have a good time without being high on a drug. Whenever possible, do them together. Here are some examples:

Remember, what is most important is not the activity but that you are taking a personal interest and that your child is developing a focus on things other than drugs.

Marijuana Jargon

Parents today are trying to cope not only with marijuana but also with the drug's vocabulary. While drug terms are continually changing and are often different in various parts of the country, this list may help you decipher the most popular marijuana jargon.

Acapulco Gold—a potent strain of marijuana with gold or yellow highlights.

Bong—a cylindrical water pipe used to smoke marijuana.

Burn out—a slang term for a state of apathy and deadened perceptions which can result from habitual use of marijuana.

Buzz—slang term for a high or a drug-induced euphoria.

Colombian—a potent strain of marijuana.

Decriminalization—process of reducing penalties for personal use of marijuana from prison sentences to civil fines.

Dime—a quantity of drugs which sells on the streets for $10.

Dope—slang term for marijuana and other drugs.

Duster—cigarette made of tobacco, mint leaves, marijuana, or parsley sprinkled with phencyclidine (PCP), also known as Angel Dust.

Ganja—a potent form of *Cannabis* obtained from the flowering tops and leaves of the plant. It may also be used to refer to marijuana in general.

Grass—slang term for marijuana.

Hashish—a form of *Cannabis* made either from the *Cannabis sativa* plant or its resin.

Hash oil—a form of *Cannabis* which is extracted or distilled from the *Cannabis sativa* plant.

Head shops—stores which specialize in the sale of drug paraphernalia and drug-related items.

High—a widely used slang term for euphoria and intoxication.

Hit—a single drag or inhalation of marijuana smoke.

Joint—a hand-rolled marijuana cigarette.

Killer weed—slang term for PCP-treated parsley or marijuana.

Loaded—slang term for state of being high or intoxicated.

Nickel—a quantity of marijuana which sells on the street for $5.

Ounce—a standard unit of measurement for marijuana.

Paraphernalia—drug equipment or gadgets usually sold in head shops.

Pot—slang term for marijuana.

Reefer—slang term for marijuana.

Roach—the small end of a marijuana joint which remains after most of the cigarette is smoked.

Roach clip—a device used to hold the roach or the tail end of a marijuana joint.

Rolling papers—cigarette papers used to make a marijuana joint.

Scales—paraphernalia used to weigh drug quantities for selling purposes.

Smoking stones—paraphernalia used to hold marijuana joints while smoking.

Space cadet—slang term for a habitual marijuana user whose senses have become dulled.

Spaced out—slang term for a drug-induced state of being lost or out of touch with surroundings.

Stash—Any container or place used to store marijuana or other drugs.

Stoned—slang term for being high or intoxicated from marijuana.

Supergrass—slang term for marijuana treated with phencyclidine (PCP or Angel Dust).

Toke—slang term for an inhalation of marijuana or hashish smoke.

Water pipe—paraphernalia used to smoke marijuana or hashish which filters the smoke through water.

Weed—slang term for marijuana.

Common Drugs of Abuse

CATEGORY	Drugs	Sample trade or other names	Medical uses	Dependence: Physical	Dependence: Psychological	Effects in hours	Possible effects	Effects of overdose	Withdrawal symptoms
CANNABIS	Marijuana	Pot, grass, reefer, sinsemilla	Under investigation	Unknown	Moderate	2-4	Euphoria, relaxed inhibitions, increase in heart and pulse rate, reddening of the eyes, increased appetite, disoriented behavior	Anxiety, paranoia, loss of concentration, slower movements, time distortion	Insomnia, hyperactivity, and decreased appetite occasionally reported
	Tetrahydrocannabinol	THC							
	Hashish	Hash	None						
	Hash oil	Hash oil							
DEPRESSANTS	Alcohol	Liquor, beer, wine	None	High	High	1-12	Slurred speech, disorientation, drunken behavior	Shallow respiration, cold and clammy skin, dilated pupils, weak and rapid pulse, coma, possible death	Anxiety, insomnia, tremors, delirium, convulsions, possible death
	Barbiturates	Seconbarbital, Amobarbital, Butisol, Tuinal	Anesthetic, anti-convulsant, sedative, hypnotic	High-moderate	High-moderate	1-16			
	Methaqualone	Quaalude, Sopor, Parest	Sedative, hypnotic	High	High	4-8			
	Tranquilizers	Valium, Librium, Equanil, Miltown	Anti-anxiety, anti-convulsant, sedative	Moderate to low	Moderate				
STIMULANTS	Cocaine	Coke, flake, snow	Local anesthetic	Possible	High	½-2	Increased alertness, excitation, euphoria, increase in pulse rate and blood pressure, insomnia, loss of appetite	Agitation, increase in body temperature, hallucinations, convulsions, possible death, tremors	Apathy, long periods of sleep, irritability, depression
	Amphetamines	Biphetamine, Dexedrine	Hyperactivity, narcolepsy						
	Nicotine	Tobacco, cigars, cigarettes	None	High	High	2-4		Agitation, increase in pulse rate and blood pressure, loss of appetite, insomnia	
	Caffeine	Coffee, tea, cola drinks, No-Doz		Low	Low				
HALLUCINOGENS	LSD	Acid	None	None	Degree unknown	8-12	Illusions and hallucinations, poor perception of time and distance	Drug effects becoming longer and more intense, psychosis	Withdrawal symptoms not reported
	Mescaline and peyote	Button, Cactus							
	Phencyclidine	PCP, angel dust	Veterinary anesthetic	Unknown	High	Variable			
	Psilocybin · psilocin	Mushrooms	None	None	Degree unknown	6			
INHALANTS	Nitrous oxide	Whippets, laughing gas	Anesthetic	Possible	Moderate	Up to ½ hr	Excitement, euphoria, giddiness, loss of inhibitions, aggressiveness, delusions, depression, drowsiness, headache, nausea	Loss of memory, confusion, unsteady gait, erratic heart beat and pulse, possible death	Insomnia, decreased appetite, depression, irritability, headache
	Butyl nitrite	Locker room, rush	None						
	Amyl nitrite	Poppers, snappers	Heart stimulant						
	Chlorohydrocarbons	Aerosol paint, cleaning fluid	None						
	Hydrocarbons	Aerosol propellants gasoline, glue, paint thinner	None						
NARCOTICS	Opium	Paregoric	Antidiarrheal, pain relief	High	High	3-6	Euphoria, drowsiness, respiratory depression, constricted pupils, nausea	Slow and shallow breathing, clammy skin, convulsions, coma, possible death	Watery eyes, runny nose, yawning, loss of appetite, irritability, tremors, panic, chills and sweating, cramps, nausea
	Morphine	Morphine, Pectoral Syrup							
	Codeine	Codeine, Empirin Compound with Codeine, Robitussin A-C	Pain relief, cough medicine	Moderate	Moderate				
	Heroin	Horse, smack	Under investigation	High	High	12-24			
	Methadone	Dolophine, Methadose	Heroin substitute, pain relief						

MARIJUANA UPDATE

Reprinted from Reader's Digest

he first two articles in this booklet, combined under the title "Marijuana Alert" made reprint history for the Reader's Digest. In the 44 years the Digest has offered reprints, no other article has sold so many copies in so short a time. Within 11 months, over three million reprints were sold to schools, colleges, churches, courts, scout groups, the military, PTAs, businesses, clinics and to hundreds of thousands of individuals, young and old. Especially touching have been the letters from young people who said they wished to share this information with their peers.

In this edition of Marijuana Update we are adding Peggy Mann's latest article from the December 1981 Reader's Digest: "Marijuana Alert III: The Devastation of Personality."

Marijuana Alert

I. BRAIN AND SEX DAMAGE

All during this decade, evidence has been accumulating that smoking marijuana may be seriously injurious to health. In the past few years, striking new studies have further darkened the picture, demonstrating measurable harm to diverse body organs—above all, to the brain and reproductive functions. Today the specter of a damaged human stock haunts scientific researchers and clinicians alike.

This two-part report brings, first, an account of the new research and, second, one doctor's cry of anguish about the hundreds of pot-damaged teen-agers with whom he has worked.

By Peggy Mann

SCIENTISTS from around the world are sending warning signals to the millions who smoke marijuana: mounting evidence indicates that pot smokers may be unwittingly damaging their brains, and decreasing their chances of conceiving and producing completely healthy offspring.

These warnings have emerged from recent gatherings of scientists reporting on their latest research. In July 1978, at the International Symposium on Marijuana held in Reims, France, some 50 researchers from 14 countries presented new studies about marijuana's injurious effects on reproduction, lungs, cellular metabolism and the brain. In March 1979, at a conference in Virginia sponsored by the National Institute on Drug Abuse, investigators revealed more evidence of marijuana's harmful effects on the reproductive system. Three months later, at a conference at New York University Medical School, scientists and psychiatrists added to the growing list of dangers caused by chronic smoking of marijuana.

Responding to the startling evidence, the House of Representatives Select Committee on Narcotics Abuse and Control began hearings on the health hazards of marijuana in July. Rep. Lester Wolff (D., N.Y.),

chairman of the committee, said: "The United States is the most pervasive drug-abusing nation in history. And our most pervasive illegal drug of abuse is marijuana." Citing the latest (1978) national drug-abuse survey, Wolff noted that one in nine high-school seniors was smoking pot on a daily or near-daily basis, an almost 80-percent increase in three years' time; that pot smoking is now common among junior-high students; that evidence indicates pot smoking among 8- to 12-year-olds is increasing.

How to Get Out. Of all the effects of marijuana, its impairment of the brain and its harm to the reproductive system pose the greatest threats. Pot has an *affinity* for the brain and the sex organs. Marijuana's 61 cannabinoids, substances found exclusively in the cannabis plant, are soluble in fat. They are attracted to the body's fatty organs, where they remain, only gradually clearing from the body. As one researcher put it, "When the high is gone, the pot is not."

The principal psychoactive, or mind-altering, cannabinoid is delta-9-THC. It has been traced radioactively, and it takes five to eight days for just half the THC in a single marijuana cigarette to clear from the body.

One organ that contains a large amount of fat is the human brain. The testes and ovaries also have high fat contents. What does marijuana buildup in these organs do?

One psychiatrist researching this area is Dr. Robert C. Gilkeson of Cleveland, Ohio. In 1976, a tall, handsome teen-ager came into his office. Formerly a good student, Steven complained of poor grades and difficulties in concentration and memory. "Everything I used to like has become a drag. Even chicks. I feel bummed out all the time."

Dr. Gilkeson discovered reversed d's and b's in the young man's handwriting—a classic finding in learning disabilities. He suggested an electroencephalogram (EEG), a brain-wave test. The report came back: "Abnormal EEG. Diffuse encephalopathic process [brain impairment]. Markedly immature for age." His brain-wave readings were typical of those of a 6- to 8-year-old.

Steven had admitted being a chronic (usually defined as daily or near-daily) pot smoker. The psychiatrist advised him to give up pot for two months. Steven was so shaken that he agreed.

In eight weeks his EEG was notably better, though not yet normal. "But," said Dr. Gilkeson, "there was real improvement in Steven's grades, in his mood, memory, humor and speech patterns." Encouraged, Steven agreed to go for another two potless months—after which the EEG report read: "Within normal limits for age."

Because of his work with Steven, Dr. Gilkeson embarked on a study that is still in progress. He has thus far given EEGs to 43 "typical" teen-

agers, who had been high at least twice a week for the previous four months, but who had not smoked pot for 48 hours preceding the test. The results: all 43 EEGs, like Steven's, were "markedly immature" and indicated diffuse brain impairment.

Dr. Robert Heath, chairman of the department of neurology and psychiatry at Tulane Medical School, showed the Reims symposium slides of magnified brain cells from the limbic area of Rhesus monkeys. (The limbic area—directly involved in control of sex drives, appetites, emotions—is very similar in man and Rhesus monkeys.) These monkeys had been exposed to the smoke of two to three "monkey-sized" marijuana cigarettes (one-fourth of an average human joint) a day at three-percent THC. ("Good pot" sold on the street today has three- to six-percent THC.) Said Dr. Heath, "The smoke of one monkey-sized joint produces the same blood level of THC in the monkey as a human gets in his blood after smoking a 'human-sized' joint of the same THC strength. By checking blood levels, researchers can ascertain so-called 'human equivalency doses' for monkeys and for all other animals."

Result: the monkeys' brain cells showed striking structural changes, including abnormal deposits of opaque material in—and a widening of—the synaptic cleft between neurons. "This," said Dr. Heath, "may cause a slowing down or interruption in the movement of brain messages." There was also an abnormal clumping of the small sacs in the endings of nerve cells that contain the chemical activators of the brain, plus a significant increase of foreign matter in the nerve-cell nuclei. All of these conditions are associated with brain impairment.

At an earlier conference, Dr. Heath noted the rapidity of these changes: "Clinical observation indicates that people might drink for years before serious brain damage occurs. But it would seem from the monkey studies that you have to use marijuana for only a relatively short time in moderate to heavy use before evidence of brain damage begins to develop."

One of the symptoms reported by chronic pot smokers is impairment of short-term memory. Neurologist William H. Stuart of Atlanta, Ga., reports the case of a 28-year-old building subcontractor who smoked pot daily (but took no other drugs and drank only beer). After five years, he would look at a blueprint, walk over to his workmen and forget what to tell them. "He stopped smoking pot two years ago," says Dr. Stuart. "But his short-term memory has not improved at all. He has lost his business. And now he's working for another subcontractor—hammering nails."

Clinicians who see human results like this are as concerned as the researchers. Dr. Mitchell Rosenthal, president of Phoenix House Foundation (which runs a residential-treat-

ment program for drug abusers), represents the findings of many drug therapists when he says: "Most of the time, when kids stop smoking pot, they will regain what short-term memory they have lost. But I've also seen cases of kids who were chronic users, or who combined pot with another drug, where there was no subsequent improvement."

Effects on Sex. Perhaps the most important structure in the limbic area is a small lump of tissue in the center of the brain: the hypothalamus. Hanging from this is a still smaller lump: the pituitary. As little as a billionth of a gram of THC affects the hypothalamus, which, in turn, affects the pituitary, which regulates endocrine function and the hormones controlling sex and reproduction.

In November 1978, Drs. Joan Bauman and Robert Kolodny of the Masters & Johnson Institute in St. Louis reported on their study of 26 women, ages 18 to 36, who smoked pot three times a week or daily for at least six months prior to the study. Thirty-one percent of the menstrual cycles of the pot-smoking women showed a shortened luteal phase, compared with 9.7 percent of the cycles of the non-pot-smoking women. A shortened luteal phase could mean that a growing embryo might not be properly nourished. The women also had decreased prolactin, a hormone important in milk production.

Another survey by Dr. Kolodny, of 500 men, ages 18 to 30, who had smoked pot for six or seven years, showed statistically significant lower rates of sexual activity and fewer orgasms. Dr. John Hall, chairman of the department of medicine at Kingston Hospital in Jamaica, reports that 20 percent of his male patients who have smoked for five or more years complain of impotence.

Research studies on animals seem to indicate that cannabinoids result in lowered sperm count and in a greater number of abnormally shaped sperm. These findings were replicated in humans using high marijuana dosages by Dr. Wylie Hembree of Columbia University College of Physicians and Surgeons. Dr. Hembree also found a statistically significant decrease in sperm mobility.

Genetic Roulette. Since men constantly produce millions of sperm, the formation of sperm probably returns to normal when pot smoking is stopped. But the effect on women could be lasting. Dr. Akira Morishima of Columbia University says: "A human female is born with about 400,000 eggs. If *they* are injured, there's no way to repair that damage. And it has been proven, by radioactively tagging the THC, that it accumulates in the ovaries, as well as in other organs."

Dr. Morishima gave 150 "teenaged" mice very high doses of THC daily. "All the mice were mated, and were sacrificed when the fertilized egg had multiplied into four cells. In the control group, very few of the fertilized eggs were abnormal. But in the THC group, about half the eggs were dying or had died. Of those that had lived, 20 to 30 percent looked unhealthy."

At the California Primate Research Center of the University of California at Davis, Rhesus monkeys, whose reproductive systems closely resemble those of human females, were given raisin cookies spiked with milligram amounts of THC—the monkey equivalent of a human smoking one to two joints. The monkeys received this dose every day for three years. Result: 44 percent of the pregnant "THC mothers" produced dead or dying offspring, compared to 12 percent, a normal birth loss, in the control group. Although all of the dead babies of the THC-drugged monkeys *looked* normal, a pathologist did microscopic evaluations of tissues and organs from each. He found subtle developmental abnormalities in various tissues and organ systems of the THC-exposed offspring, which were not present in the dead offspring of the undrugged mothers.

Says Dr. Ethel Sassenrath, who conducted the study: "The THC-exposed babies that survived acted differently from the others. They didn't seem to have normal 'brakes' on behavior. They showed deficits in attention. This kind of subtle behavioral difference is characteristic of marginal brain damage in early development."

An agent capable of affecting sex function, sex cells (sperm and egg) and fetus must be regarded as a source of possible congenital damage in those offspring that do survive. In 1974, Dr. Gabriel Nahas of Columbia University College of Physicians and Surgeons, a pioneer in marijuana research, discovered that THC exposure diminished the capacity of individual cells to orchestrate life according to the genetic plan built into cellular molecules. THC inhibits formation of DNA (the genetic material essential for proper cell functioning and division) in cells, resulting in cellular death and abnormality. Dr. Nahas's finding has since been replicated by other scientists from 12 research groups here and abroad. Dr. Nahas warns: "Today's pot smoker may not only be damaging his own mind and body, but may be playing genetic roulette and casting a shadow across children and grandchildren yet unborn."

Warning Signals. Some pot smokers discount findings about marijuana's possible genetic effects with the comment: "Pot smokers have perfectly healthy babies." However, as pointed out by Dr. Robert Peterson of the National Institute on Drug Abuse: "Despite thousands of years of alcohol consumption, not until recently did doctors discover that not very large quantities of alcohol can cause the fetal alcohol syndrome which results in abnormal babies. Therefore, pregnant marijuana smokers would be wise to heed the present warning signals before all the definitive findings are in."

Dr. Robert DuPont, former direc-

tor of the National Institute on Drug Abuse, puts it this way: "In all of history, no young people have ever before used marijuana regularly on a mass scale. Therefore, our youngsters are, in effect, making themselves guinea pigs in a tragic national experiment. Thus far, our research clearly suggests that we will see horrendous results."

II. ENEMY OF YOUTH

By Walter X. Lehmann, M.D.

ANYONE who says "pot" is harmless will get an argument from me. It hasn't been harmless for any of the nearly 3000 young people I've worked with as a specialist in adolescent medicine. Virtually all who became addicted to hard drugs started with marijuana, which distorted their judgment and put them into the drug scene. But I've learned that marijuana by itself is bad enough—its effects too often subtle and insidious, with long-range damage difficult to calculate.

One morning the police referred to me a 15-year-old youth who, after smoking marijuana, had used the family car to tear up some neighborhood lawns. The boy was brought in by his serious, well-groomed older brother, an outstanding student and athlete. It turned out that the younger boy had never used pot before, and had been so frightened by his experience that he never wanted to use it again; he was no problem.

The problem was his older brother, though it would not be apparent for some time. Dynamic, self-possessed, he confided to me that he himself had been smoking pot, cautiously but regularly two to five times a week, enjoyed getting moderately high and had suffered no untoward effects. He felt fine, his grades remained well above average, he was captain of the soccer team and had been accepted at an Ivy League college.

How often we hear of such overachieving easy riders among our middle-class friends nowadays. I tried to warn him about the gradual, long-term changes I had seen in other outstanding young people, but nothing would dissuade him from continuing his "moderate" marijuana use. I saw him again late that summer, just before he left for college. He was slovenly, unkempt, apathetic, slow. He admitted that he had been smoking pot heavily during summer vacation. I pleaded with him to get off it, but he ignored my advice.

He was home by December, having been asked to leave college. By then, he was a typical heavy user. He

didn't care about anything except getting high every day. His parents brought him to me. Eventually he began to perceive what marijuana had done to him and decided he had to kick the habit.

It wasn't easy—it rarely is. I used to think that marijuana created only a psychological dependence, without physical addiction. But now I am persuaded otherwise. I have seen too many youngsters suffer the terrible anxiety, the sleeplessness, the sweating, the lack of appetite, the nausea and the general malaise of withdrawal. Fortunately, my patient had enough fortitude left in him to do it.

He's back in college now, doing okay. His academic performance is acceptable, if mediocre—it's the best he can do, but it isn't close to the promise he once showed. He has not regained that sharp edge, that quality of drive, spirit and capability that once made him a standout. I am not optimistic that he will ever regain it. From what I have seen, there is no question that marijuana wreaks a havoc in the body, brain and psyche that can't be entirely undone.

I know a lot of young people who have broken the pot habit and seem to be doing well, but who are not likely ever to realize the rich potential that once was theirs. For example, another outstanding student-athlete became my patient after marijuana had all but ruined his relationship with his parents and caused him to be dropped from sports participation. He graduated from high school only by the skin of his teeth. He felt terrible, physically and emotionally, but was determined to recover. He got off the stuff and began doing a really good job of pulling his life together.

He then decided, however, that he could handle marijuana. He would smoke it only at parties and on special occasions; it would never get out of hand again. His attitude was not untypical; recovering youngsters often develop this sense of confidence and it's hard to convince them that they haven't a chance against this stuff. I argued and pleaded to no avail. He stopped coming in. Then, in the fall, he came back. He was smoking pot regularly again, and feeling bad. He agreed that he couldn't control it, wanted to get straight again. We're working on it.

Right now, millions of our young people are marijuana users who are performing well and are very sure that they are in firm control of themselves. But as they continue using pot, a gradual deterioration will set in for many of them—in *all* phases of their lives. Grades will slip, athletic prowess will diminish and there will be trouble at home, all of this compounded by an increasing, witless apathy.

For each young pot user who goes straight, there will be many who won't. They won't know where or how to find help, and most won't want help. They will drop out, from school and life. They will simply lose themselves in that frightful marijuana-induced lethargy.

The most unfortunate ones will

become victims of cannabis psychosis, serious mental illness resulting from heavy marijuana use. I have seen young people in the grip of it. Many of the victims land in psychiatric hospitals, are discharged, but never fully recover.

Take the case of one ninth-grader I knew, a good student and baseball player, a gifted artist, a really dynamic youngster who had a substantial contribution to make to the world. Some friends got him to try marijuana. He enjoyed the high it produced. Soon, he was a heavy user. He lost interest in everything else, literally stopped functioning to the extent that in the middle of his tenth-grade year he was expelled from school. He didn't care; all he wanted to do was smoke pot all the time.

When his parents objected, he left and just wandered, for months. His father finally found him and placed him in a psychiatric institution in the hope he could be straightened out. But he didn't improve. After six months, the hospital discharged him. That was ten years ago. He's still wandering. He has no contribution to make now, and nothing to look forward to.

I have seen too many kids wander away like that, never to recover from the damage they have inflicted on themselves. It is heartbreaking.

With 16 million Americans currently using marijuana, imagine the enormity of the destruction that is taking place in this generation. Yet today no fewer than 11 states have already decriminalized marijuana and there is a drive to make the ruinous junk legal.

Of course, most people who use pot are not criminals, any more than those millions of us who violate traffic laws are criminals. But even those of us who violate traffic laws understand that we must have such laws, that to abolish them would be to descend into chaos.

We need equitable laws dealing with marijuana, not a legal market for the stuff. For if we legalize marijuana, the human suffering that will ensue will surely lead us one day to repeal such a law. And, by that time, there won't be much we can do to help the victims of our folly.

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Marijuana Alert II: More of the Grim Story

By Peggy Mann

In the midst of a virtual marijuana epidemic among young people, Americans are discovering just how injurious this drug can be. Research shows that pot permeates body tissues and fluids, and can damage almost every human organ and system tested. Last December, The Reader's Digest published a report describing how marijuana can harm the brain and reproductive system. More than three million reprints have already been ordered by readers. This follow-up continues the devastating story, documenting how pot can damage the lungs, heart and immune system.

Fourteen-year-old Teddy waited nervously for Dr. Ingrid Lantner's diagnosis. Unexpectedly, the doctor asked, "How much pot do you smoke a day?"

Teddy stared. How did *she* know?

"I've had a number of teen-age patients with this type of chest pain," Dr. Lantner told him. "My prescription is: cut out pot. The pain should disappear in 4 to 12 weeks." Teddy followed the doctor's orders and his pain went away without medication.

Dr. Lantner of Cleveland, Ohio, is just one of many pediatricians concerned about the swelling caseload of pot-smoking* youngsters. "We never used to see teen-agers with chest pain," she says. "In fact, we hardly used to *see* teen-agers; they're over the childhood diseases and usually in the prime of health. But now young pot smokers show up with a variety of symptoms, some of which—like severe chest pain, certain respiratory conditions and short-term memory loss—are normally associated with middle and old age. Many pediatricians, and I am one of them, are convinced marijuana is the single most dangerous health hazard facing American youth today."

According to Dr. Robert DuPont, founding director of the National Institute on Drug Abuse (NIDA), those pediatricians may be right. Over the past two decades, asserts DuPont, American teen-agers suffered deteriorating health, the only age group in the United States to do so. The time segment exactly coincides with the epidemic of marijuana use among young people.

Psychiatrist Dr. Carlton Turner, director of a NIDA marijuana research project at the University of Mississippi, says there is no other drug used or abused by man "that has the staying power and broad cellular actions on the body that cannabinoids do." (Cannabinoids are chemicals found only in the can-

*"Pot" comes from the Mexican *potaguaya*, or hemp plant.

nabis plant, from which marijuana and hashish are prepared.)

Only a handful of the 61 cannabinoids identified so far in pot have been studied. Each is metabolized, or broken down, into many other chemicals. Some are psychoactive; some are not. But all are biologically active. "In human studies, the chief psychoactive cannabinoid, delta-9-THC, and its by-products showed up in all body fluids tested," Turner adds. "The cannabinoids are fat-soluble and accumulate in the fatty sections of the cells and in the fatty organs. We know from animal studies that only five percent of the THC [for tetrahydrocannibinol, a group of compounds found exclusively in the cannabis plant] gets across the blood-brain barrier, which we assume creates the 'high' in humans. That five percent causes problems enough. But what concerns me even more is what the other unknown 95 percent of this and the other cannabinoids are doing to the body."

Some of the non-psychoactive cannabinoids have been shown to be more harmful to certain organs than the psychoactive ones. And cannabinoids make up only a fraction of the 421 known chemicals in the cannabis plant; new ones are constantly being identified. (In contrast to marijuana, most other drugs of abuse—LSD, cocaine, alcohol, etc.—are single chemicals.)

Recent research documents that marijuana smoking is harmful to the entire pulmonary tree, ranging from the sinus cavities to the deepest recesses of the lungs. Marijuana may be even more injurious to lungs than tobacco smoke, and its symptoms may strike faster. Dr. Forest S. Tennant, Jr., former director of a U.S. Army drug-abuse program in West Germany, studied more than 1000 U.S. soldiers stationed there and found that heavy cannabis smoking produced sinusitis, pharyngitis, bronchitis, asthma and other respiratory disorders in a year or less. In number and severity, the pulmonary symptoms far outranked those of older soldiers who had averaged 1½ packs of cigarettes a day for 11 years or more. "I saw chronic bronchitis and emphysema—generally found only in 45- or 50-year-olds—in hashish-smoking soldiers who were only 18 years old," says Dr. Tennant.

Cancer Risk. Pot smokers without symptoms can also have hidden lung disease. Dr. Donald Tashkin, director of the Lung Function Laboratory of U.C.L.A. Hospital in Los Angeles, uses highly sophisticated equipment to look for subclinical damage that otherwise cannot be detected. In one study of 28 seemingly healthy young men who averaged five "joints" a day for 47 to 59 days, Tashkin found highly significant dose-related impairments of lung function. These impairments are similar to those seen by other researchers studying moderate to heavy tobacco use over many years. In a more recent study, Tashkin and co-worker Barry Calvarese showed that marijuana smokers who averaged 2.2 joints a day for five years had 25-percent more airway resistance than a matched group of tobacco smokers who averaged 16 cigarettes a day for the same period.

"Airway resistance," explains Dr. Gary Huber, head of the University of Kentucky's Tobacco and Health Research Institute, "determines in part how well we can get oxygen into our bodies and how well we can get out the toxic carbon dioxide that can poison the cell." Working with rats, Huber has found that marijuana enhances—by some 200 percent—enzymes that potentially contribute to the "eating" or digesting of the lung itself.

Can pot cause lung cancer? A 1971–74 study compared a typical unfiltered U.S. tobacco cigarette with a marijuana joint. (Note: in the early '70s the THC potency of street pot was much lower than it is today.) Both smokes contained roughly equal amounts of such irritants and gaseous toxic agents as carbon monoxide, ammonia, acetone and benzene. But the carcinogens benzanthracene and benzopyrene were present in marijuana smoke in amounts 50 to 70 percent greater than in the smoke of cigarettes. When these researchers applied marijuana- and tobacco-smoke condensates to the backs of mice, both produced cancerous tumors.

Dr. Rudolph Leuchtenberger and his wife, Cecile, of the Swiss Institute for Experimental Cancer Research at Lausanne, studied more than 5000 animal and human lung-cell cultures exposed to puffs of smoke from a marijuana cigarette and from a tobacco cigarette. Their conclusion: Fresh smoke from marijuana cigarettes is harmful to lung cells in that it contributes to the development of pre-malignant and malignant lesions. The smoke from the tobacco cigarette had much less effect.

Lung-Tissue Damage. In February 1980, Dr. Tennant published the result of actual lung biopsies taken from 30 soldiers (average age 20), who had smoked hashish heavily for eight months to a year. Ninety-one percent of those soldiers who had smoked both hashish and cigarettes showed squamous-metaplasia cells, a step removed from "wild" or cancerous cells. Those who had smoked either hashish or cigarettes alone had a substantially lower incidence of these pre-cancerous cells. "However," Tennant noted, "the hashish-smoking soldiers were also more likely to be cigarette smokers too." He summed up: "We know that if the condition that caused the squamous-metaplasia cells doesn't stop, then cancer will likely ensue." The soldiers had smoked hash with a THC content comparable with that in pot smoked by millions of U.S. schoolchildren today.

Nor was there much difference in amounts smoked. The latest (1979) National High School Senior Survey shows that not only does one out of ten 12th-graders smoke pot daily, but these daily users now average 3½ joints a day, and 13 percent of them smoke more than seven joints daily. Of the 51 percent who smoked pot at

A Pot-Detection Test

In March 1980, after several years of research, an inexpensive, reliable, easy-to-use method was finally perfected for detecting cannabinoids in urine. Says Dr. Robert Willette, chief of the National Institute on Drug Abuse's Research Technology Branch: "The cannabinoid test is a real breakthrough. It can determine in 60 seconds, with 95-percent accuracy, the presence of cannabinoids in the urine for up to 48 hours after a joint has been smoked."

Many hospitals and private clinical laboratories now have the facilities for running the test, and many physicians are already finding it useful. For example, Dr. Donald Ian Macdonald, president-elect of the Florida Pediatric Society, plans to encourage every pediatrician in Florida to routinely use the new test when examining students from the sixth grade up. "It serves an invaluable function in alerting the physician," says Macdonald, "by eliminating 'the games of denial' many pot smokers play. It can save time and money needlessly spent on batteries of tests when, in fact, pot proves to be the sole cause of the problem."

all during their senior year, 43 percent said they usually stay high three to six hours or more.

Thus far, clinical evidence shows that all obvious symptoms, such as cough, chest pain and rales (abnormal sounds in the lungs or air passageways), disappear in time, if pot smoking is stopped. But what about the damage that shows up only in microscopic examination? The findings of Harris Rosenkrantz of EG&G Mason Research Institute are far from reassuring.

In three separate studies, rats were exposed to several puffs of pot smoke each day, the "human-equivalency dose" of an adult smoking one to six joints a day. Exposure from 3 to 12 months resulted in extensive dose-related lung damage, and the condition remained even after the smoking had been stopped for a month—which is roughly equivalent to two years for humans.

Another condition that remained 30 days after the pot puffs stopped involved the lungs' immune system. "In the healthy lung," says Rosenkrantz, "there are very few clumps of macrophages, scavenger cells that absorb and devour foreign matter. Rats were given the 'human equivalent' of one to six joints a day. After 180 days the macrophage clumps increased some 300 percent, clogging the air sacs. Some were so heavily blocked that they could not function."

A Weak Attack Force. Sue Powers was a beautiful girl of 16. But, as she frequently declared, "I'm *sick* of being sick!" She had a chronic cough, recurrent fever, sore throats. She'd recover from one illness and promptly come down with another. Her parents then learned she had been a daily pot smoker for two years. One day Mrs. Powers gave Sue a scientific report about marijuana's effect on the body's defense system, and suggested, "Why don't you cut out the pot and see what happens?" Sue did so. Within six months all her symptoms had disappeared. Coincidence? Perhaps. However, other parents and pediatricians have reported similar stories.

The scientific paper Mrs. Powers showed her daughter was done by Dr. Gabriel Nahas of Columbia University College of Physicians and Surgeons. The study centered on T-lymphocytes, white blood cells that play a key role in the body's defense system. T-cells constitute 70 percent of the lymphocytes in the bloodstream, and they respond by "charging up" (dividing rapidly) to increase their attack forces when they sense invasion by a virus, bacterium or other foreign body.

Nahas's study involved 51 young, chronic pot smokers—average age 22, who had averaged four joints a week for an average of four years—and 81 non-pot-smoking controls average age 44. Nahas found that the biochemically measured rate of division of the T-lymphocyte cells was a startling 41 percent lower in the young cannabis smokers than in the middle-aged controls.

Nahas then took his study a step further. He tested 24 kidney-transplant patients being given regular doses of special medication to *suppress* the immune system so that fighter cells would not reject the "foreign body"—the newly transplanted kidney. As an extra comparison, he also tested 60 cancer patients, who are known to have depressed immune systems. The results: the specially medicated transplant patients showed the highest impairment of T-lymphocyte response—53 percent. However, pot smokers ran neck and neck (41 percent) with the cancer patients (40 percent) in the suppression of their T-lymphocyte fighter cells.

Perhaps the most dramatic examples of defense-system impairment are the photo-micrographs taken by Dr. Marietta Issidorides of the University of Athens, Greece. Neutrophils (bacteria-fighter cells) from subjects who had never used cannabis showed up on slides as round, "plump," with a distinct "skin," or cell membrane. However, neutrophils from long-term (20-year) hash users were smaller and crumpled-looking, with dramatic alterations in the cell membrane. They were described as deformed cells, which probably could not function when challenged to do their assigned task of cleaning the blood.

All animal studies and most human studies show that marijuana not only inhibits immune cells' ability to recognize the encroachment of disease or a "foreign invader"; it also suppresses the ability to take any action once encroachment is recognized. Says immunologist Robert McDonough, "That's like having a feeble, half-blind night watchman, taking his gun away from him—and *then* expecting him to function."

Other Serious Hazards. All existing research clearly shows that marijuana should never be used by anyone with heart trouble. In one study,

Dr. Wilbert S. Aronow, professor of medicine and chief of cardiovascular research at the University of California at Irvine, gave a relatively weak joint to ten patients with angina pectoris (chest pain caused when insufficient oxygen is supplied to the heart muscle because of narrowing of the coronary arteries). Their average heart rate was 70 beats a minute. Ten puffs of pot jumped it to 100 beats a minute. Blood pressure also increased significantly. "By increasing either the heart rate or blood pressure, you increase the amount of oxygen needed by the heart muscle," says Aronow. "With ten puffs of pot you increase both simultaneously. But that's not all. Marijuana increases the amount of carbon monoxide in the blood as well—thereby reducing the amount of oxygen delivered to the heart muscle."

In other studies, Aronow showed that the amount of time one can exercise before chest pain occurs was reduced almost 50 percent after ten puffs of pot whereas ten puffs of a high-nicotine tobacco cigarette reduced exercise time only 23 percent. He also showed that marijuana significantly weakened the heart muscle's pumping action.

"Not only could marijuana precipitate a heart attack or cause sudden death in patients with known coronary disease," concludes Aronow, "but people who might have subclinical heart disease—without symptoms—could also be taking a risk. Remember that nearly 25 percent of persons dying suddenly from coronary heart disease have had no prior recognized symptoms of heart disease."

What about the cardiovascular systems of the hundreds of thousands of youngsters who are stoned more than three hours every day? Drs. Louis Vashon and Adam Sulkowski studied more than 100 young pot smokers (ages 18 to 25) and found that during all the hours of the "high," their heart rate was significantly elevated, in many cases rising from the normal 60 to 70 beats per minute to 130 to 150. The more THC absorbed, the faster the heart rate. "Such over-stimulation of the heart muscle," says Sulkowski, "could be the cause of the chest pains so commonly felt by young, chronic pot smokers."

Chest pain, emphysema, chronic bronchitis—these are conditions not normally seen in young people. Yet, at a time when four million of them, ages 12 to 17, are pot users, research and clinical evidence strongly suggest marijuana as a cause of these and other early symptoms and diseases of middle and old age. We already know that tobacco smoking is the largest preventable cause of death in America. There are many reasons to believe that marijuana smoking may be even more harmful.

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Marijuana Alert III: The Devastation of Personality

By Peggy Mann

Reader's Digest has published two previous Marijuana Alert reports. The first, in December 1979, described marijuana-caused impairment to the brain and the reproductive system. The second, in November 1980, emphasized the harm pot does to the lungs, the heart and the immune system. This third report examines the drug's dramatically impairing effects on cells and how this can damage man's most precious possessions: the mind, the personality, the spirit.

In 1978, Dr. Marietta Issidorides of Athens, Greece, one of Europe's most respected biologists, conducted electron-microscope studies on the white blood cells of 40 long-term hashish smokers. "We learned," she reported, "that long-term use of cannabis (the plant from which marijuana and hashish come) deformed a significantly high proportion of the cells. Impaired white blood cells are unable to function properly and protect the individual from infections."

Two years earlier, Dr. Akira Morishima of Columbia University looked at the white blood cells of 25 apparently healthy young males who had smoked marijuana at least twice a week for four years. He

found that one-third of their cells contained only 5 to 30 of the normal human complement of 46 chromosomes. These are the particles in every cell's nucleus that pass on genetic instructions to the next generation. "In my twenty years of research on human cells," said Morishima, "I have never found any other drug that came close to the DNA damage done by marijuana."

A study completed earlier this year showed a relationship between marijuana use and cancer. Dr. Josel Szepsenwol of the department of biological sciences of Florida International University injected 216 mice with very small amounts of THC or cannabinol (2 of the 61 cannabinoids, chemicals found only in the cannabis plant) dissolved in sesame-seed oil, once a week. *Over 50 percent developed cancer.* Only 4 percent of the control mice (injected with oil only) developed cancer, a normal percentage for this strain of mice.

Erosion of Life. These research findings are just a few examples of marijuana damage to basic life processes. Since 1975 some 300 studies of cannabis's harmful effects on animal and human cells have appeared in scientific journals. These effects include: botched division, slowed growth and abnormal-sized nuclei in cells, disturbed production of protein, and also damage to sperm cells and ova, nerve and connective-tissue cells.

Pioneer marijuana researcher Dr. Gabriel Nahas sums up the central role of marijuana's effects on human cells: "The many findings of cell damage caused by cannabis explain all the other damaging effects of the drug—on the lungs, sex organs, brain, immune system. I call the slow cell damage done by regular pot smoking over the years *a slow erosion of life.*"

Psychological signs of pot impairment are often not slow to appear and, generally, the younger the user the more rapid the onset of the impairment. Last year marijuana use was second only to heroin addiction as reason for admission to federally funded drug-treatment facilities, and half of those admitted had begun smoking pot at age 14 or younger.

Marijuana use is now so endemic in every stratum of society that there is no longer such an identifiable entity as a pot-*prone* personality. Only one characteristic remains as a "prone" factor: youth. According to the latest (1979) U.S. National Survey on Drug Abuse, one out of six youngsters in the 12-to-17 age group was a current (within the past month) pot smoker. In the 18-to-25 age group, *one out of three Americans was a current pot smoker.* However, after young people *become* heavy pot smokers, these widely diverse users tend to gel into a startling sameness, with a distinct pot-induced profile.

The Pot Personality. "Not all kids have all the symptoms," says Dr. Dean Parmelee, director of adolescent in-patient services at Charles River Hospital, a teaching affiliate of Boston University School of Medicine. "In fact, some bright youngsters with outgoing personalities seem to be able to maintain their grades and activities for a few years. But gradually all users—youngsters and adults—compromise their potential, their activities and their life-style. And heavy *young* users eventually develop most, if not all, of the 'pot personality' symptoms."

Dr. Harold Voth of the Menninger Foundation's School of Psychiatry, and chief of staff of the Topeka VA Medical Center, has studied the psychopathology of marijuana in depth for the past eight years. He defines the pot personality: "The most obvious impairments caused by chronic marijuana use are in the area of Organic Brain Syndrome (OBS). These include impaired short-term memory, emotional flatness, and the amotivational—or dropout—syndrome. This can progress from dropping out of sports, to dropping out of school, to dropping out of the family."

Voth lists other typical symptoms of pot-induced OBS: "diminished will power, concentration, attention span, ability to deal with abstract or complex problems, and tolerance for frustration; increased confusion in thinking, impaired judgment, hostility toward authority.

"Another pernicious symptom," says Voth, "is the element of denial—refusal to believe the hard medical evidence that marijuana is physically and psychologically harmful." He also points out that it takes years of heavy drinking to reach the same point of psychological impairment that marijuana can induce in a matter of months, particularly in the case of the very young user.

Personality Changes. Unlike the heavy drinker who generally "becomes himself again" when sober, the underlying personality structure of the chronic pot smoker seems to change. Dr. John Meeks, medical director of the Psychiatric Institute of Montgomery County, Maryland, says, "If someone smokes twice a week or more, sobering up—in any total sense—never occurs. Even when not 'high,' he or she remains in a state of subacute intoxication; in most cases, without even recognizing this 'holdover' effect."

While alcohol is water soluble and washes out of the body in a matter of hours, cannabinoids are fat soluble and accumulate in fatty sections of the cells and in fatty organs (the brain is one-third fat). Only very slowly do the cannabinoids seep back into the bloodstream so they can be metabolized and eliminated. Thus they act like time-release capsules, constantly emitting subtle intoxication.

Rhesus-monkey studies done by psychiatrist-neurologist Robert Heath give further insights into cellular causes of psychological symptoms. The monkeys were exposed to the smoke of two to three "monkey-sized" marijuana ciga-

rettes (one-quarter the size of a human "joint") five days a week, for six months. In each monkey, several thousand brain cells from 42 different areas of the brain were examined under the electron microscope. Although there were some structural cell changes in all the brain sites, striking impairment was found in the sites specifically related to the typical pot symptoms of apathy and flatness. Dramatic cell impairment was also found in sites correlated with irritability and fear—prominent symptoms of pot-induced paranoia.

"I don't know of any other drug, including alcohol," says Heath, "that causes such a wide spectrum of brain changes as we saw in those cells. And today tens of thousands of U.S. teen-agers are inhaling proportionally far more pot smoke every day than we gave those monkeys."

Senile Symptoms. In March 1980 Dr. Adam Sulkowski, a geriatric psychiatrist, published the first scientific paper to set forth the many similarities between the psychological symptoms seen in marijuana intoxication and senility. In July 1981 Dr. Stephen Williams, professor of psychology at Houston Baptist University, and psychiatrist Jason Baron, director of Deer Park Hospital in Houston, also found a number of "senility symptoms" in a study of 60 teen-agers in a drug-treatment program who were daily pot smokers but used no other drugs. At the beginning of the study, they were given a battery of psychological tests, which were then repeated after six pot-free weeks in the hospital.

Williams reported: "In many very elderly people, we see an unreasonable preoccupation with how one's body feels, obsessive-compulsive tendencies and inflexibility. All these symptoms were strikingly evident in our study of teen-age pot smokers, and all these symptoms decreased markedly once the drug was out of their systems.

"Depression," says Williams, "is perhaps the most common psychological symptom among old people. It is usually associated with feelings of loss, such as loss of loved ones, of health, etc. The chief cause of depression among our teen-age subjects was also loss: a tremendous loss of self-esteem. One good-looking, well-dressed 16-year-old put it this way: 'I'm like an empty shell. There is nothing left that I like about myself. And pot did it.' "

Another finding is regressive immaturity. Says psychiatrist Mitchell Rosenthal, the director of Phoenix House in New York City, the nation's largest residential drug-treatment facility, "Just when our youngsters need most to grow psychologically, they are pushed back toward infantilism by self-absorption and the desire for instant gratification. When they need most to learn how to cope with the emotional storms and squalls of the troubled teen-age period, they are instead copping out, blowing

their problems away with pot."

Rosenthal predicts: "A sizeable number of our young people will not mature as they should. Instead, we can look forward to a growing population of immature, underqualified adults, many of whom will be unable to live without economic, social or clinical support."

Risk of Relapse. In August 1981 Dr. Mark Gold completed a study of 100 teen-age and adult "marijuanaholics"—chronic users of pot, who are psychologically, physiologically and socially disabled. Gold, a recipient of the American Psychiatric Association's 1981 Foundation Prize for Research in Psychiatry, is director of research at Fair Oaks Hospital in Summit, N.J., one of the few psychiatric hospitals in the country that specializes in treatment of the marijuanaholic.

"Our study," says Gold, "shows that in the case of youngsters who abstain completely for an average of six months, there is return of concentration, attention and memory to expected levels.

"This is not true for older marijuanaholics. In respect to short-term memory loss, in some cases, they do not appear to come back all the way. Furthermore, because older users are usually long-term users, they have made subtle changes in their lives that are hard to undo. For example, they slide into less-demanding jobs."

Gold also found that, like alcoholics, marijuanaholics are always at high risk of relapse. "Even if off the drug for a year," he says, "one or two joints can send them on a pot binge, and they relapse quickly into their former use patterns. And although it may have taken two years to reach their prior seriously disabled state, it may take only two weeks of renewed pot smoking to revert to that same level."

According to Dr. Carlton Turner, now Senior Policy Adviser on Drug Policy for the White House and former director of the National Institute on Drug Abuse Marijuana Research Program at the University of Mississippi, most Americans do not realize the pandemic proportions of marijuana use among our youngsters. Turner warns: "The inescapable fact is that unless our current pot-smoking habits are reversed sharply, marijuana will have drastic long-term physical and psychological health effects on our young people and, therefore, on the future of our families and our nation."

REPRINTED FROM THE DECEMBER 1981 ISSUE OF READER'S DIGEST

MARIJUANA AND DRIVING: The Sobering Truth

A growing number of stoned motorists is endangering lives on our highways. Here's what must be done

By Peggy Mann

RECENT STUDIES blow the warning whistle on a little-publicized but nonetheless frightening new menace to motorists: the pot smoker driving "high" on the highways. Persuasive evidence is mounting that such drivers often have a distorted sense of space and time, altered peripheral and central vision, and impaired manipulative and coördination skills.

Surveys reported by the National Institute on Drug Abuse (NIDA) reveal that 60 to 80 percent of the marijuana users questioned sometimes drive while "intoxicated" on pot. Every day, increasing numbers of stoned drivers are endangering lives—as pot use escalates into what NIDA calls "a national epidemic among young people." (The latest countrywide survey shows that one out of every nine high-school seniors smokes pot *daily,* almost twice the 1975 figure.)

Our nation is both unaware of the marijuana highway crisis and unprepared for it. Many states have inexpensive and legally recognized tests for establishing alcoholic intoxication. However, we have no workable roadside test for marijuana intoxication. (NIDA is funding research on such a test, but it is probably three or four years away from being ready.)

In 39 states, possession of marijuana is still a crime, but enforcement is generally lax—and pot smokers know it. Of the 11 states that have decriminalized marijuana, only Alaska and Minnesota have thus far enacted a special increased penalty for possession of pot in a vehicle. In all 11 states, many pot-smoking drivers mistakenly believe that decriminalization implies governmental sanction to smoke marijuana—anywhere.

The politicization of pot has helped to obscure the picture. But when emotions and polemics are cleared away, both pro- and anti-decriminalization forces agree that it is dangerous to drive stoned. Even the National Organization for the Reform of Marijuana Laws (NORML), which supports removal of all legal penalties for possession of pot for personal use, "strongly discourages driving while under the influence of marijuana or any other drug, and recognizes the legitimate public interest in prohibiting such conduct."

The "legitimate public interest," however, is *not* being protected. Highway officials nationwide express profound concern. Richard L. Burton, former commissioner of Alaska's Department of Public Safety, is among the most apprehensive, saying, "The alcohol problem on the highways will soon be only half as serious as marijuana—and that's not because the alcohol problem is going to get any better!" And Lee Dogoloff, White House adviser on federal drug policy, states: "It is essential that Americans understand the very real hazards of driving while marijuana-intoxicated."

How much does marijuana

Research findings have been remarkably consistent. In 1975, the Boston University Traffic Accident Research Team surveyed 267 drivers deemed "most responsible" for a fatal accident. Sixteen percent of the 267 drivers had been smoking marijuana prior to the fatal accident. Statistically, "marijuana smokers were over-represented in fatal highway accidents," the study concluded. Other traffic-fatality studies in Albuquerque, N.M., Baltimore, and in Oklahoma City yielded a similar incidence of marijuana involvement.

California's Department of Justice has made the first large-scale study directly relating marijuana to traffic arrests. The study, completed last year, covered 46 of the state's 58 counties and examined 1792 blood samples (randomly selected from 19,000 turned in by the California Highway Patrol) from drivers arrested for traffic accidents or for driving under the influence of drugs. The tests were made with an expensive radioimmunoassay laboratory technique that can analyze blood samples for molecules of THC (tetrahydrocannabinol), the chief mind-altering ingredient of marijuana. Sixteen percent of the 1792 arrested drivers had sufficient THC in their blood to constitute marijuana intoxication.

Victor Reeve, supervisor of the California study, pointed out: "This must be regarded as a conservative figure because, of the drivers arrested, fewer than half agreed to give a blood sample. How many of the remaining drivers were under the influence of marijuana we will never know."

More than 50 studies have been made in the United States since 1970, when standardized grades of so-called "NIDA marijuana" were made available to researchers. Says Herbert Moskowitz, a University of California research psychologist who has probably done the most work on marijuana with simulated driving studies: "The preponderance of evidence indicates that marijuana impairs skills performance and perceptual processes, including vision, attention, and tracking behavior—all important components of driving performance."

Such impairments as tracking performance are significant after two "street joints." Drivers may imagine they are doing a fine job of keeping the car in the correct lane, when in fact they are weaving.

In addition, marijuana can cause: impaired night-driving abilities, impaired short-term memory function, impaired concentration, impaired ocular motor control and impaired vigilance.

These results are generally obtained in driving-simulator tests—and most people drive *better* under simulated conditions than they drive normally.

However, one test was carried out in *actual* driving conditions by Dr. Harry Klonoff, professor of psychiatry at the University of British Columbia. He chose 64 psychologically stable subjects who had used marijuana before. One third were given a low dosage of one street joint, one third received a high dosage of two joints, the other third received placebos. With dual controls and an observer in each car, all 64 volunteers drove through a closed course with no other traffic. Low-dose subjects showed a 33-percent significant decline in driving skills, while high-dose subjects showed a 55-percent significant decline.

Thirty-eight drivers also covered a 16-mile route from the university campus to the traffic-heavy downtown area, and back again. These 38 were rated by the system used to examine drivers for licensing. Final figures for the road test showed that those on the low dose had a *42-percent decline* in driving skills, while the high-dosage subjects had a *63-percent decline.* Unusual driving behavior, Klonoff reported, included missing traffic lights or stop signs, poor handling of the vehicle in traffic, unawareness of pedestrians and stationary vehicles.

Of 11 behavioral components tested, the three of greatest vulnerability were judgment, caution and concentration—despite the fact that some of the subjects paid special attention to their driving to prove that pot had no impairing effects.

Studies in 1972 showed a definite decrease in skills performance 5 to 6 hours after intake of a strong social dose of marijuana. Another worrisome factor, reported in 1976 by NIDA, is that a person may attempt to drive without realizing that his functioning is still impaired—even though he

or she no longer feels "high."

A 1972 study of driving behavior in a safety-controlled area showed a "marked" decline in driving abilities was still present 5 to 6 hours after intake, a "definite" effect 8 to 10 hours after intake, and a lingering effect as long as 24 hours later. Another factor: Many chronic pot smokers reported that only a few puffs of "good pot" (with a high THC content) can result in a sudden intense high (if this happens on the highway it can be frightening and dangerous).

Chronic pot smokers tend to view their driving impairments through rose-colored glasses. Among more than 1000 people arrested for marijuana possession in Minnesota, 25 percent thought pot had no effect on their driving. More than 25 percent thought pot actually improved their coördination. Some enthusiasts *prefer* driving stoned, saying that it becomes less boring. "I get more into my driving" goes the refrain.

Dr. Joseph Davis, the medical examiner in Dade County, Fla., with Arnold W. Klein and Dr. Brian D. Blackbourne surveyed 571 local college and post-graduate students on pot and driving. In every driving category former and infrequent users sharply downgraded their ability to perform while stoned, while chronic pot smokers gave themselves quite good grades. Despite their cheery assessments, 53 percent of the chronic users had been stopped by police for driving under the influence of drugs; 22 percent had three or more violations, compared with 2.3 percent of non-users. Eight percent had had their license revoked, compared to one percent of the non-users.

The alcohol-drunk driver usually finds it hard to hide his condition, if stopped by the police. But the pot-high driver often believes he can "come down" and carry on a seemingly normal conversation with a police officer. This apparent ability to "hide their high" gives many pot smokers confidence that they can drive stoned.

One such self-assured driver, a 30-year-old medical sociologist—a heavy drug user and daily pot smoker for about five years before he swore off drugs—reported smoking a few joints at a friend's house. Then he borrowed his friend's car, certain that he could handle whatever might turn up on the road—including the police. "But," he recalls, "as I drove down one of the busiest streets in the city, the dream-like pleasure I usually felt when driving stoned suddenly burst into a total psychedelic experience. All I could see was a myriad of tiny dancing lights. I was so totally spaced out that I had no awareness of even being *in* a car, much less driving one."

When a traffic light turned red, he didn't notice it, and crashed into a small car. He got out, danced a little jig, walked away and wandered around the city for hours. "I knew something had happened. But I didn't know what."

Around 4 a.m. he remembered, and turned himself in to the police. He learned that he had wrecked his friend's car, and had totally demolished the small car in front of him—which had, in turn, crashed into the sedan in front of it. Remarkably, no one had been seriously injured.

What can be done—now? We need not wait helplessly until scientists come up with a roadside kit for testing THC levels, and states enact laws to deal with marijuana-intoxicated drivers. There are two avenues we can take right away.

First, state legislatures should immediately pass laws imposing a high fine and/or other stiff penalty for possession of marijuana *in a vehicle*—including taxis, buses, trucks, trains and planes.

Second, we must inaugurate educational programs by governmental agencies, insurance companies, foundations, private groups and, especially, high-school and private-driving instructors. (A friend of mine taking a driving course was offered a joint by an instructor, "to relax.") Coördination of effort will increase the impact of the message: *it's dangerous to drive stoned.*

Brochures should be distributed at toll booths, gas stations, garages. Car users are a captive audience, and "spot warnings" can be tailored to a range of radio programs. The American Automobile Association and National Safety Council could begin a nationwide information campaign.

Unless we move in these directions, warns NIDA's Robert Willette, who is responsible for developing THC test kits, more and more pot users will be driving high. "We can only hope that growing awareness of the problem," he says, "will prevent a national disaster."

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Municipality of Anchorage

POUCH 6-650
ANCHORAGE, ALASKA 99502-0650
(907) 264-4111

TONY KNOWLES, MAYOR

DEPARTMENT OF HEALTH AND ENVIRONMENTAL PROTECTION

February 13, 1984

The Honorable Charlie Bussell
The House of Representatives
Pouch V
Juneau, Alaska 99811

Dear Representative Bussell:

Enclosed please find a concise outline of needs regarding drug abuse, alcoholism and mental health services in Anchorage. Following the statistics identifying the scope of the problem (section one) is the requested amount of state dollars (section two) needed to sufficiently fund treatment services. It is with concern the Department asks that you review the attached in an effort to responsibly fund Anchorage behavioral health treatment and prevention services.

As noted in the enclosed, the amount of money lost yearly to the potential market productivity of substance abusing youth in Anchorage alone is over 11 million dollars and the money lost to Alaskan industry yearly is greater still.

If you have any questions do not hesitate to contact the Behavioral Health Division.

Respectfully,

James C. Parsons, Division Manager
Susan Johnson, Program Coordinator
Frances Purdy, Program Coordinator

JCP.L2/dl/s

LEGISLATIVE PACKET
DEPARTMENT OF HEALTH AND ENVIRONMENTAL PROTECTION
DIVISION OF BEHAVIORAL HEALTH
825 "L" Street
Anchorage, Alaska 99501

Contact Persons: James C. Parsons, Division Manager
Susan Johnson
Frances S. Purdy
264-4775

DRUG ABUSE AND ALCOHOLISM SERVICES

THE PROBLEM: SECTION ONE

PREVALENCE OF DRUG TAKING BEHAVIOR BY YOUTH:

Prevalence is defined by the Center for Alcohol and Addiction Studies (1983) as the incidence of drug-taking as represented by the percent of respondents who ever tried a drug, (i.e., has used the drug one or more times in a lifetime). Prevalence is particularly important as an indicator of potential drug abuse and as a descriptor of high risk populations. Hence, its greatest relevance is in relationship to the development of prevention programs. Although the Anchorage School District recently conducted a survey in which prevalence rates have dropped (approximately 5%) rates still exceed the national average.

COMPARISON OF PREVALENCE WITH PSYCHOACTIVE DRUGS IN ANCHORAGE AND NATIONWIDE (Students: Grades 7 - 12)

°ANCHORAGE STUDENTS HAVE TRIED:

- ° STIMULANTS 4.4 times the national average
- ° COCAINE 3.6 times the national average
- ° TRANQUILIZERS 3.6 times the national average
- ° DEPRESSANTS 3.4 times the national average
- ° MARIJUANA 1.9 times the national average
- ° HALLUCINOGENS 1.8 times the national average
- ° CIGARETTE smoking in youth is one strong predictor of future drug abuse: 50% of the Anchorage student population has tried tobacco
- ° ALCOHOL use by Anchorage youth is only slightly higher than the national average yet an alarming 82% of the student population has tried alcohol

(Center for Alcohol and Addiction Studies, 1983)

- ° 77 MILLION DOLLARS IS LOST TO ALASKAN INDUSTRY YEARLY DUE TO ALCOHOLISM ALONE.
- ° 11.3 MILLION DOLLARS IS LOST YEARLY TO THE POTENTIAL MARKET PRODUCTIVITY OF ALCOHOL MISUSE BY YOUTH (GRADES 9-12) IN ANCHORAGE ALONE.
- ° NATIONALLY, 23% OF THE POPULATION WHO HAD "EVER TRIED" COCAINE BECAME REGULAR USERS AND 20-25% OF THAT GROUP BECAME DEPENDENT ON COCAIN .
- ° PREVALENCE OF DRUG USE IN ADULTS (26+ YEARS) IS TWICE THE NATIONAL AVERAGE FOR EVERY DRUG BUT ALCOHOL AND TOBACCO.

- PREVALENCE OF DRUG USE IN YOUNG ADULTS (18-25 YEARS) FOR MARIJUANA, COCAINE AND STIMULANTS IS ONE AND ONE-HALF TO TWO AND ONE-HALF TIMES THE NATIONAL AVERAGE.

- ONLY 15% OF THOSE PEOPLE NEEDING HELP FOR DRUG AND ALCOHOL PROBLEMS RECEIVE IT.

- THE MUNICIPALITY OF ANCHORAGE SERVED 30% OF THE STATEWIDE DRUG AND ALCOHOL ABUSING POPULATION TREATED WITH STATE OFFICE OF ALCOHOL AND DRUG ABUSE (SOADA) MONIES IN FY-83.

- THE MUNICIPALITY OF ANCHORAGE SERVED 22% OF THE STATEWIDE ALASKA NATIVE SUBSTANCE ABUSING POPULATION TREATED WITH SOADA MONIES.

- THE MUNICIPALITY OF ANCHORAGE SERVED 74% OF THE SUBSTANCE ABUSING POPULATION 17 YEARS OF AGE AND YOUNGER TREATED WITH SOADA MONIES.

WHO IN ANCHORAGE RECEIVES DRUG AND ALCOHOL TREATMENT AND AT WHAT COST

- 3400 PEOPLE RECEIVED DRUG AND ALCOHOL SERVICES IN FY83;

- DEPENDING ON THE PROGRAM FROM 10% TO 35% OF THE CLIENTELE SERVED WERE ALASKANS FROM OUTSIDE THE ANCHORAGE AREA;

- DRUG ABUSE PROGRAMS RECEIVE 46% OF THEIR FUNDS FROM ALCOHOL MONIES;

- COST PER UNIT OF SERVICE PER DAY:

SOURCE	AVERAGE COST
ANCHORAGE JAILS	76.00*
ADULT RESIDENTIAL	46.00
DRUG AND ALCOHOL OUTPATIENT	55.00
YOUTH RESIDENTIAL	107.00**

ESTIMATED COST TO MAINTAIN NARCOTIC DRUG HABIT "ON THE STREET" IS $400.00 A DAY.

* THIS DOES NOT INCLUDE CENTRAL ADMINISTRATION, OVERTIME FOR EMPLOYEES IN A 24 HR. INSTITUTION OR MAJOR CAPITOL EXPENDITURES: WE SUSPECT THIS FIGURE TO BE SIGNIFICANTLY LOWER THAN ACTUAL COST

** THIS REPRESENTS ONLY 61.4% OF THE COST OF COMPARABLE SERVICES, WHICH DOES NOT INCLUDE TRANSPORTATION OR FAMILY COUNSELING

DO THESE PROGRAMS WORK?

- RESEARCH CONDUCTED NATIONALLY (1982) CONCLUDED THAT ONE YEAR AFTER TREATMENT THERE WAS;

NO CRIMINALITY AND NO DRUG USE IN:

38% OF THE THERAPEUTIC COMMUNITY GRADUATES
34% OF THE DRUG FREE OUTPATIENT GRADUATES
32% OF THE METHADONE MAINTENANCE GRADUATES

AND

NO DAILY OPIOD USE IN:

71% OF THE THERAPEUTIC COMMUNITY GRADUATES
70% OF THE DRUG FREE OUTPATIENT GRADUATES
67% OF THE METHADONE MAINTENANCE GRADUATES

MENTAL HEALTH SERVICES

THE PROBLEM

- MORE INDIVIDUALS FROM API ARE DISCHARGED TO ANCHORAGE THAN ARE ADMITTED FROM ANCHORAGE EACH YEAR.

- 53% OF OUTPATIENT SERVICES ARE PROVIDED BY PUBLICALLY FUNDED ANCHORAGE PROGRAMS.
  OVER 50% OF THE API DISCHARGES ARE MADE TO ANCHORAGE.
  ONLY 25% OF THE STATE FUNDS COME TO ANCHORAGE ($806,000 IN 1983).

- EVEN WITH THE HELP OF THE PRIVATE SECTOR MENTAL HEALTH SERVICES, ONLY 32% OF INDIVIDUALS NEEDING HELP ARE SERVED.

- ANCHORAGE SERVES AS A REGIONAL CENTER WITH SPECIALIZED MENTAL HEALTH AND NECESSARY ANCILLARY SERVICES.

- OVER 450 ATTEMPTED SUICIDES OCCURRED IN ANCHORAGE IN 1982.

- OVER 4,800 CRISIS CALLS CAME FROM DEAF INDIVIDUALS.

- BETWEEN 400-450 CHRONICALLY MENTALLY INDIVIDUALS RESIDE IN ANCHORAGE.

- THE DIVORCE RATE IS ALMOST TWICE THE NATIONAL AVERAGE.

- OVER 1000 NEW CASES OF CHILD ABUSE AND NEGLECT WERE REPORTED IN ANCHORAGE IN 1982 OVER 1981.

DO THESE PROGRAMS WORK

IN 1982:

39 SUICIDES IN PROGRESS PREVENTED BY CRISIS INTERVENTION

506 VICTIMS OF RAPE RECEIVED ASSISTANCE

353 INDIVIDUALS WERE MAINTAINED OUTSIDE API

68% OF FAMILIES SEEKING HELP SUCCESSFULLY SOLVED THEIR PROBLEMS.

COST OF TREATMENT

IN 1982:

3,511 INDIVIDUALS RECEIVED MENTAL HEALTH COUNSELING
12,432 CRISIS TELEPHONE CALLS WERE ANSWERED

AVERAGE COST OF CRISIS TELEPHONE CALL	$ 10.89
AVERAGE COST OF INDIVIDUAL THERAPY SESSION	$ 63.39

COST PER DAY FOR CARE OF THE CHRONICALLY MENTALLY ILL:

IN THE COMMUNITY	$ 82.68
IN A.P.I.	$275.00

INDIVIDUALS WITH ACUTE OR CHRONIC MENTAL ILLNESS HAVE A BETTER THAN 20% CHANCE OF AVOIDING HOSPITALIZATION IF INITIAL CRISIS INTERVENTION IS PROVIDED IN THE COMMUNITY. IF THEY MUST BE HOSPITALIZED, THEY WILL SPEND 50% LESS TIME IN THE HOSPITAL.

BUDGET REQUEST: SECTION TWO:

FY-85 BUDGET REQUEST BY
DIVISION OF BEHAVIORAL HEALTH
DEPARTMENT OF HEALTH AND ENVIRONMENTAL PROTECTION
DRUG, ALCOHOL, MENTAL HEALTH TREATMENT

	STATE			
	Alcohol	Drug	Mental Health	Local
Primary Prevention (Education, Information, Alternatives)	-0-	-0-	1,500	202,200
Early Intervention: Consultation/Education (Anchorage Community Mental Health Center) (Alaska Council on Prevention of Alcohol and Drug Abuse)	36,430	-0-	67,500	47,280
Youth Residential Services (Volunteers of America - ARCH)	231,390	214,300	-0-	102,500
Youth Outpatient Services (Akeela House)	24,530	32,960	-0-	14,590
Women's Residential Services (Salvation Army - Reflections)	255,770	-0-	-0-	27,150
Women's Outpatient Services (Akeela House)	33,210	36,540	-0-	16,820
Women's Long Term Care Services (Alaska Women's Resource Center)	29,570	-0-	-0-	64,930
Native Residential Services (Cook Inlet Native Association - Amouak)	306,450	-0-	-0-	32,520
Native Outpatient Services (Cook Inlet Native Association)	138,120	-0-	-0-	14,660
Methadone Maintenance/Drug Free Outpatient (Narcotic Drug Treatment Center)	-0-	239,570	-0-	87,130
Suicide Prevention/Emergency Treatment (Suicide Prevention and Crisis Center)	-0-	-0-	270,020	89,980
Community Service Patrol (Salvation Army Clitheroe Center)	277,000	-0-	-0-	29,400
Interface Domestic Violence-Substance Abuse	27,000	-0-	-0-	3,000
Halfway House (Salvation Army Clitheroe Center)	40,240	-0-	-0-	9,580
Detoxification Services (Salvation Army Clitheroe Center)	598,930	-0-	-0-	63,560
Residential Treatment (Akeela House - Drug Therapeutic Community, Salvation Army Clitheroe Ctr. - Alcohol)	215,830 867,020	183,220 -0-	-0- -0-	89,550 92,010
Outpatient Services				
Family (in-home) (Family Connection)	-0-	-0-	91,552	30,510
Family (Akeela/Suicide Prevention and Crisis Center/ Anchorage Community Mental Health Center)	300,390	68,800	70,971	80,540
Chronically Mentally Ill (Anchorage Community Mental Health Center)	-0-	-0-	387,346	89,980
Adult (Anchorage Community Mental Health Center)	-0-	-0-	130,660	43,540
Elderly (Anchorage Community Mental Health Center)	-0-	-0-	112,321	37,430
Evaluation & Intake (Akeela)	34,880	29,610	-0-	14,470

* It is important to note that the Division continues to support the provision of prevention efforts, which have been sanctioned by the Municipal Health Commission. However, there has never been any significant funding allocated to prevention. The Division would like to respectfully request that you rigorously consider the importance of funding prevention in FY-85.

POUCH V
JUNEAU, ALASKA 99811
(907) 465-4990

Alaska State Legislature
HOUSE OF REPRESENTATIVES

REPRESENTATIVE
CHARLIE BUSSELL
CHAIRMAN

Committee on Judiciary

GUEST SPEAKERS

2:00 P.M.
Dr. Reese T. Jones
Professor of Psychiatry
Langley Porter Psychiatric Institute
University of California - San Francisco

Dr. Jones is a clinical psychiatrist at the University of California at San Francisco and served as a member of the distinguished commission of scholars sponsored by the Institute of Medicine to study the physiological and psychological effects of marijuana. The report, entitled "Marijuana and Health," is recognized by the medical community as one of the preeminent academic works on the subject.

2:30 P.M.
Gabriel G. Nahas O.B.E, M.D., Ph.D.
Professor of Anesthesiology
Columbia University
College of Physicians and Surgeons

Dr. Nahas is a professor at Columbia University in New York City and is reknowned as a pioneer in the research of the biological effects of marijuana. Considered by many as the foremost authority on the subject, Dr. Nahas has authored two books Keep off the Grass and Marijuana: Biological Effects.

ANCHORAGE DAILY NEWS
9 MARCH, 1984
3.9.84

Bussell: 'Close door on marijuana use'

By K.C. MOON
Daily News reporter

House Judiciary Chairman Charlie Bussell, R-Anchorage, has drafted a bill that would "close the door on marijuana use" in the state by making illegal the possession of any amount of the drug.

The bill was introduced by the committee earlier this week.

Current statutes, barely a year old, permit possession of up to a quarter pound of marijuana for personal use in one's own home.

Rep. Don Clocksin, a minority member of the committee, said the bill is "a waste of time" for legislators because they decided the marijuana issue just two years ago.

Law enforcement officials say the proposed law would not have a substantial effect on current enforcement patterns. Busting drug dealers, not users, would continue to be the focus of police and courts.

Bussell said he drafted the bill because Alaska's current law is "out of step with other states' laws and federal guidelines regarding marijuana."

Alaska, Hawaii and Oregon are the only states that permit any use of marijuana. Federal laws prohibit marijauna possession.

He said the bill reflects a conservative wave that he said is sweeping the country. "As a rough guess, I would say that the public would support (recriminalizing marijuana) about 60-40."

But Clocksin, D-Anchorage, said he doubts Bussell's reasons for introducing the bill. "There's no justification for it.

"The law we passed in 1982 was a delicate and fair compromise," he said. "We should stick with it. This new bill is a waste of the legislature's time."

The Alaska Legislature voted to allow private use of marijuana and decriminalize public use in 1975, the same year the state Supreme Court ruled that possession of marijuana in a person's home for personal use was constitutionally protected.

The court ruled that alleged health hazards associated with marijuana use were not substantial enough to justify the state's intrusion into citizens' constitutional right to privacy.

Revised drug laws passed in 1982 made public marijuana-smoking a criminal offense but allowed possession of less than four ounces in one's home.

The latest proposal would make possession of smaller amounts of the drug a misdemeanor offense with a maximum punishment of $1,000 fine and 90 days in jail.

Bussell said medical evidence published since the 1975 court decision gives the state reason enough to ban marijuana-smoking completely.

He cited no specific health studies, saying such research would be brought out when hearings on the bill begin.

Dan Hickey, chief prosecutor for the state, said the state's policy on prosecuting drug users would not change if lawmakers pass a blanket ban on marijuana.

"Our emphasis is not in the prosecution of drug abusers," he said. "Our focus is on major distributers and traffickers."

"Our opinion on that would not change if this (bill) becomes law."

Anchorage Police Chief Brian Porter said he supports banning all marijuana use but does not see the department shifting its sights to individual users. "We might make a few arrests initially to get the message out," he said. "I don't see the department putting out 25 more officers" to bust private users.

Porter said such a law would rid the state of hypocrisy in the current statutes, which ban the sale of marijuana while permitting its use.

"There's a hole in the current law," said Lt. George Novaky, who heads the Anchorage Police Department's Metro Drug Unit. "We're creating a market for the use of marijuana — turning people into purchasers — while the sale of pot is still illegal.

"Obviously the majority of users don't grow their own," he said. "If they are, I want to know who's buying all the stuff that's being smuggled into the state."

Clocksin said he has heard nothing about health studies that would justify prohibiting private use of marijuana. "What (Bussell) is trying to do is to break into people's homes and tell them what to do," he said.

He called Bussell a "conservative extremist who doesn't represent the mainstream" of public sentiment.

STATE OF ALASKA 1984 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date:

REQUEST
Bill/Resolution No.: HB 698
Title: An Act Relating to Marijuana
Sponsor:
Requestor:
Date of Request:

FISCAL DETAIL
Agency Affected: Alaska Court System
Program Category Affected:
BRU, Program or Subprogram(s) Affected:

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 SUPPLIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS						
800 MISCELLANEOUS						
TOTAL OPERATING		-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

This zero fiscal note is based on the assumption that additional resources will not be added to State troopers, local police, or prosecuting attorney offices as a result of this legislation.

ANALYSIS: Attach a separate page for analysis

Prepared By: Richard Barrier Phone: 264-0545
Division: Date: March 14, 1984

Approved by Commissioner: Date:
Agency:

Distribution (by Agency preparing fiscal note):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

12/1/83

We are very concerned about the health hazards of marihuana use. These hazards are described in the Seventh Annual Marihuana Report to the Congress from the Secretary of Health, Education, and Welfare (HEW), which was released on April 18, 1979. This report summarized recent research on the medical and social effects of marihuana use and pointed out the dramatic increase in marihuana smoking among teen-agers and adolescents.

A need remained, however, for a comprehensive review of marihuana research efforts that would identify the most urgently needed and promising lines of inquiry upon which future decisionmaking in this area could be based. Therefore, Secretary Califano announced that the Department of HEW will undertake a comprehensive review of the existing scientific evidence on marihuana. This review will encompass research into the physiological effects of chronic marihuana use as well as behavioral research on use-related problems, such as intervention strategies to help adolescents resist peer pressure, evaluate evidence, and assess risks.

Responsibility for seeing that this review is conducted has been assigned to the National Institutes of Health (NIH). An independent scientific group will implement this review and is expected to produce a report within 12 months.

Since 1967 the Federal Government has spent approximately $35 million on marinuana research to support over a thousand research projects. This research effort continues. For example, this fiscal year, FY 1979, the National Institute on Drug Abuse (NIDA) will support approximately a hundred research studies totaling $3.8 million. NIDA-supported research includes investigations into the effects of marihuana on the heart and lungs, on psychological, social, and physical development, and on pregnancy, as well as research into possible medical use, including the treatment of glaucoma.

Mr. Chairman, presently available evidence clearly indicates that marihuana is not a "safe" substance. While I will not attempt this morning to review all of the scientific findings described in the Marihuana and Health Report, I would like to briefly indicate to the Committee what the hazards of marihuana use are for adolescents and to various organs and systems of the human body.

Acute Intoxication Impairs Learning, Memory and Intellectual Performance

Virtually all of the many studies which have been done of performance while "high" converge toward the conclusion that marihuana interferes with immediate memory and intellectual performance in ways that impair thinking, reading comprehension, and verbal and arithmetic problem solving. Less familiar, more difficult tasks are interfered with more than well-learned performance, and the effect depends on the amount used and the tolerance for the effect.

Marihuana Intoxication Impairs Driving and Other Skilled Performance

Evidence strongly suggests that being "high" interferes with driving, flying, and other complex psychomotor performance at usual levels of social usage.

Despite their commonly expressed belief that their driving skills are impaired by cannabis intoxication, there is reason for believing that more marihuana users drive today while "high" than was true in the past. As use becomes increasingly

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Health Consequences of Marihuana Use

William Pollin, M.D.
Director
National Institute on Drug Abuse

common and socially acceptable, and as the risk of arrest for simple possession decreases, still more people are likely to risk driving while "high." In limited surveys, from 60 percent to 80 percent of marihuana users questioned indicated that they sometimes drive while high. Marihuana use in combination with alcohol is also quite common, and the risk of the two drugs used in combination may well be greater than that posed by either alone.

A study reported in 1976 of drivers involved in fatal accidents in the greater Boston area was conducted by the Boston University Accident Team. They found that marihuana smokers were overrepresented in fatal highway accidents as compared to a control group of nonsmokers of similar age and sex.

While there have been no recent studies, research thus far indicates that even experienced pilots undergo marked deterioration in performance under flight simulator test conditions while "high." Thus, flying an aircraft while marihuana-intoxicated should be considered dangerous.

A continuing danger common to both driving and flying is that some of the perceptual or other performance decrements resulting from marihuana use may persist for some time, possibly several hours, beyond the period of subjective intoxication. Under such circumstances, the individual may attempt to fly or drive without realizing that his or her ability to do so is still impaired although he or she no longer feels "high."

Effects on the Heart

Acute effects of marihuana use on heart function in healthy young male volunteers have been viewed as benign. However, the increased heart rate produced and evidence that chest pain associated with poor circulation to the heart muscle occurs more rapidly with marihuana use than with cigarette smoking have led to a consensus that those with heart conditions, or at high risk, should not use marihuana.

Effects on Lung Functioning

Since, like tobacco, marihuana is usually smoked and typically deeply inhaled, adverse pulmonary effects may be expected. Based on both clinical observation and laboratory measurement, marihuana shows evidence of interfering with lung function and producing bronchial irritation in habitual users. One study has found that smoking four or more "joints" per week decreases vital capacity—the amount of air the lungs can move following a deep breath—as much as smoking nearly a pack of cigarettes a day. This comparison, while widely quoted, needs confirmation by independent studies. As yet there is no direct clinical evidence that marihuana smoking causes lung cancer. It has been reported that marihuana smoke contains more carcinogens than tobacco, that in animal testing the smoke residuals produce skin tumors, and there is laboratory evidence that human lung tissue exposed in the test tube to marihuana smoke shows more cellular changes than when exposed to similar amounts of standard tobacco smoke. Very heavy marihuana smoking by healthy young male subjects under controlled experimental conditions has been demonstrated to cause mild but statistically significant airway obstruction. Under conditions of ready availability, there is also evidence that the number of marihuana cigarettes consumed (up to ten "joints" daily) may approach that of tobacco cigarettes.

From the total body of clinical and experimental evidence accumulated to date, it appears highly likely that daily use of marihuana may lead to lung damage similar to that resulting from heavy cigarette smoking. Since marihuana smokers often smoke both tobacco and marihuana, the effects of the combination require additional study.

Effects on the Immune System

Research findings are divided as to whether marihuana use adversely affects the body's natural defenses against infection and disease. Of the studies reviewed, the majority have shown that such an alteration occurs. Whether or not such changes, when they are found, have practical implications for users is not known at this time.

Brain Damage Research

A British research report, which originally appeared in 1971, attributed brain atrophy to cannabis use in a group of young male users. It continues to be widely cited, particularly in the mass media. In the original study, 10 patients, with histories of from 3 to 11 years of marihuana use, were examined by a neurological technique (air encephalography) used to detect gross brain changes. The authors concluded that their findings suggested that regular use of cannabis may produce brain atrophy. This research was faulted on several

grounds. All the patients had used other drugs, making the causal connection with marihuana use questionable; and the appropriateness of the comparison group and diagnostic technique was questionable.

Two studies were subsequently conducted in Missouri and Massachusetts. They examined two samples of young men with histories of heavy cannabis smoking using computerized transaxial tomography (CTT), a brain scanning technique for visualizing the anatomy of the brain. In both studies, the resulting brain scans were read by experienced neuroradiologists, indepedent of the drug histories. In neither was there any evidence of cerebral atrophy. Several additional points should, however, be stressed. Neither study rules out the possibility that more subtle and lasting changes of brain function may occur as a result of heavy and continued marihuana smoking. It is entirely possible to have impairment of brain function from toxic or other causes that is not apparent on gross examination of the brain in the living organism. One researcher has used electrodes implanted deep within the brains of monkeys instead of more conventional scalp recording techniques to record brain electrical activity changes related to marihuana use. He has found persistent changes related to chronic use. This same investigator has reported that rhesus monkeys trained to smoke a joint of marihuana five days per week for six months show persistent microscopic changes in brain cellular structure following this treatment. While both these experiments demonstrate the possibility that more subtle changes in brain functioning or structure may occur as a result of marihuana smoking, at least in animals, the implications of these changes for subsequent human or animal behavior are at present unknown. Other studies, using more conventional EEG techniques to measure brain electrical activity, have found changes temporarily associated with acute use but no evidence of persistently abnormal EEG findings related to chronic cannabis use.

As I indicated earlier, many clinicians feel that regular marihuana use may seriously interfere with psychological functioning and personality development, especially in childhood and adolescence. There is increasing clinical concern that at least some percentage of regular heavy daily users do develop a psychological dependence on marihuana to the extent that it interferes with functioning in a way analogous to heavy alcohol use.

Overall, of the studies reviewed, the majority have suggested enduring impairment occurs. The quality of studies in this area, in particular, is highly variable, leaving the issue in significant doubt.

Effects on the Endocrine System

There is evidence that marihuana can affect the network of glands and hormones which are involved in such functions as growth, energy levels and reproduction. Levels of the male hormone testosterone have been found to be reduced (though still within normal range) in some, but not all, studies. There is animal and human preliminary evidence that relatively heavy use, ranging from several times a week to daily use, may reduce fertility in women. Of eleven studies dealing with these areas, seven have reported endocrine changes, with four reporting no such change. The long-term significance of these results remains to be determined. Concern over possible effects on adolescent development and possible interference with sexual differentiation of the male fetus whose mother smokes marihuana during pregnancy has been expressed.

Reproductive Effects of Marihuana

There are a variety of both animal and human studies suggesting that marihuana used daily and in substantial amounts similar to those of a regular heavy tobacco smoker may adversely impair aspects of the reproductive function. One study of 16 male, healthy, chronic marihuana users, smoking from eight to twenty standard marihuana cigarettes per day for four weeks in a hospital environment, found a significant decline in sperm concentration and total sperm count. Evidence was also found of a decrease in the motility of the sperm. In this and another study, abnormalities of structure in the sperm of heavy users were detected.

Three studies in animals of the effects of marihuana on testicular functioning, including the production of sperm, have also found adverse effects. While the clinical implications of such findings are not yet known, and the effects noted may be reversible when marihuana use is stopped, they do indicate a basis for concern. Reduced levels of testosterone in male users, though still within the normal range, have been reported by some but not all the investigators.

Animal and human research on female reproductive function has detected changes that may have serious implications for human reproductive capacity. Because of the restrictions on experimental administration of marihuana to women, little is known about the effects of the drug on

human female endocrine and sexual functioning. One recently completed study of 26 females who used "street" marihuana three times a week or more for six months or more found that these women had three times as many defective monthly cycles (38.3 percent defective vs. 12.5 percent of the cycles of nonusers) as nonusing women. By "defective" was meant a failure to produce a ripened egg during the cycle or a possibly shortened period of fertility. Unfortunately, since the marihuana-using women also used more alcohol, it cannot be assumed that the effects observed were necessarily the result of marihuana use.

Research directly concerning effects on human reproduction is, however, very limited. We know of no clinical reports directly linking marihuana use and birth abnormality.

Chromosome Abnormalities

There is no new evidence to report in this area. While there were earlier reports of increases in chromosomal breaks and abnormalities in human cell cultures, more recent results have been inconclusive.

A team investigating the effect of marihuana smoke on human lung cells in laboratory culture has found an increase in the number of cells containing an abnormal number of chromosomes. Another investigator, who previously reported a high proportion of cells in marihuana smokers with reduced numbers of chromosomes, has more recently reported that the addition of delta-9-THC (the principal psychoactive ingredient of marihuana) to human white blood cell cultures also resulted in an increased frequency of cells with abnormally low chromosome numbers. The implications of these findings continue to be uncertain.

Overall, there continues to be no convincing evidence that marihuana use causes clinically significant chromosome damage. However, it should be emphasized that the limitations of the research to date preclude definitive conclusions.

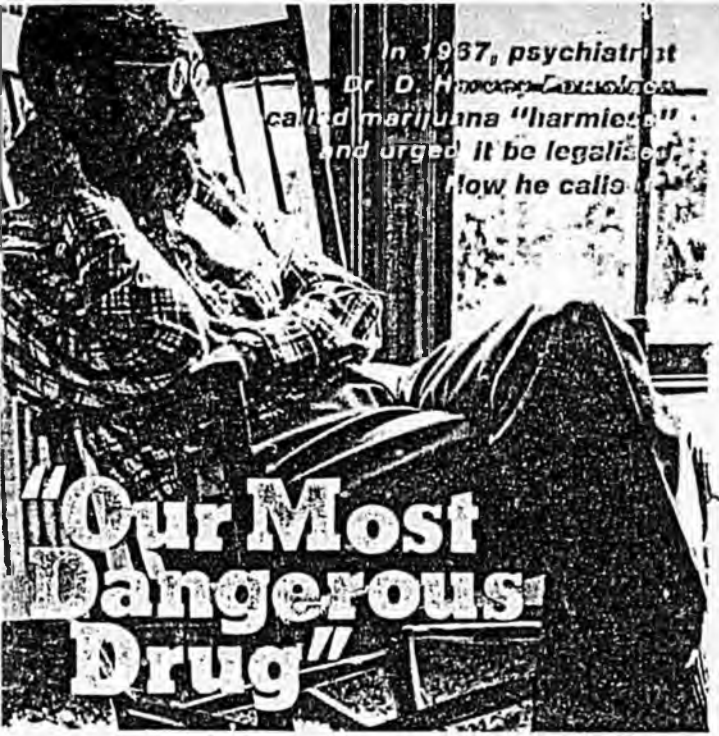
I believe we can state that there is no controversy with respect to the hazards of use by children and young people. Studies by Dr. Gene Smith, which involve nearly 12,000 junior and senior high school students in the Boston area, indicate that the earlier marihuana use begins, the more likely is use to become heavy use and to include other illicit drugs. In addition, although there is still much to be learned about the impact of heavier use on the physical functioning of the child or adolescent, studies indicate that use may cause alterations in endocrine functioning which are more serious than endocrine involvements in older mature users.

Unfortunately, the hesitancy of the scientific community in not drawing unwarranted definitive conclusions from what are preliminary research findings has led many to conclude that marihuana is without serious medical hazard, even for the very young. In reality, the situation is more like that following the popularization of cigarette smoking at the time of World War I. It required fifty years of research for the truly serious implications of cigarette smoking to become apparent.

In view of the rapidly increasing numbers of high school students who use marihuana on a daily basis during the course of the school day, these findings are especially worrisome. For example, figures derived from an ongoing study of successive yearly nationwide samples of high school seniors indicate that as of 1978 one in nine smoked marihuana daily—nearly twice as many as in 1957. In two states, Maryland and Maine, still more recent figures indicate nearly one in six high school students use marihuana daily or nearly daily.

Our most recent national household survey, conducted in 1977, indicates that there was a significant increase of 25 percent over the 1976 level in the number of persons between the ages of 12 and 17 who had ever used marihuana. More importantly, there was a nearly 30 percent increase in the number currently using, i.e., those who had used in the preceding month. Moreover, as the figures from our annual survey of high school seniors indicate, there has been a significant trend toward beginning use at increasingly younger ages. While 16.9 percent of the class of 1975 had used marihuana by the end of the ninth grade, 25.2 percent of the class of 1978 did so.

While much remains to be learned about the health implications of marihuana, I would like to emphasize that our present evidence clearly indicates that it is not a "safe" substance. As a psychiatrist, I would also like to stress that virtually all clinicians working with children and adolescents agree that regular use of marihuana by youngsters is highly undesirable. Although experimental evidence concerning the implications of use in this group is not easily obtained, there is little serious question that regular use of an intoxicant that blurs reality and encourages a kind of psychological escapism makes growing up more difficult. While there is controversy over the implications of present research concerning adult use, few would argue that every effort should be made to actively discourage use by children and adolescents.



Interviewed by Ted Torkelson and Leon Cornforth

DR. POWELSON, you were once quoted in the "Daily Californian" (April 12, 1967) as saying, "Marijuana is harmless. There is no evidence that it does anything except make people feel good. It has never made anyone into a criminal or a narcotics addict. It should be legalized." But now you are widely quoted as the psychiatrist who has reversed his opinion on legalization of marijuana. Why did you change your mind?

Well, I was at the University of California when I made that statement. As director of the student health service I was seeing a lot of patients and supervising people who were seeing many more. In the course of the next two years, either directly or indirectly, I saw literally thousands of students.

One patient whom I knew quite well and worked with for a long time, took up marijuana and hashish, which is a more concentrated form of marijuana, during the time I was seeing him. It became clear to me and to my wife, who also saw him, that there was something changing about his ability to think, to remember, to judge, to understand.

Dr. D. Harvey Powelson was formerly chief of the psychiatry department of Cowell Memorial Hospital at the University of California at Berkeley. Currently he is in private psychiatric practice in Berkeley and also serves as Mental Health Program Chief of Calaveras County, California.

The things happening to his brain were things we would expect from somebody who was having brain damage from alcohol or a tumor or organic brain damage. But he was a young healthy man. Then we discovered that the sessions that were particularly bad occurred when he said he'd used hashish within the previous two or three days. We both began to notice this connection.

Then I began to see the same connection in other patients. Since then, a lot of recent scientific evidence has supported and explained these observations.

How do the effects of using marijuana compare with the effects of other drugs?

I think marijuana is the most dangerous drug we have to contend with, for a number of reasons.

First, unlike any other drug except DDT, marijuana stays in the body for a very long period of time. It stays in the brain, and it keeps operating long after people are high. This time element is anywhere from six weeks to six months. Biochemically, using tracers has proved that only half of the marijuana leaves your body in a week.

Marijuana is soluble in oil and fat, and totally insoluble in water. The ratio is 600 to 1, so that once it gets inside the cell, it can't get back into the bloodstream the way other drugs do. If you drink alcohol, it's soluble in water and also in the bloodstream. As fast as you drink it, it goes into the bloodstream and continues to circulate, and then it is burned and leaves the body.

Marijuana just stays there. When marijuana users get high—it usually takes them two or three times, because they have to build up a certain amount in their brain. Once they get high, they take another joint and get a little higher, then the high drops off and they think they are sober again. But the marijuana is still active. Then three days later they take another joint and they get high again. But they are suffering the effects of marijuana all that time.

Is this what is called the cumulative effect?

It could be called a cumulative effect, but what I'm really talking about is the fact that marijuana stays active in the brain long after the user feels high. It's very deceptive. Since it doesn't lead to staggering or leave a smell on your breath, nobody else can tell that you're high and you don't know that you're high or whether you're stoned. You're not high in the sense of feeling good, but you're stoned. Your brain isn't functioning right. And this can be proved. You can give a person mental tests before he takes a joint, and then you can show that he can't do the same test as well for as long as 72 hours after the equivalent of one to three joints. It depends on the concentration.

What is marijuana's effect on the function of the brain?

If you ask somebody to take 100 minus 7 back to 0, he has to do two things at once. He has to remember what he is doing, and he has to keep track of the last number. It's not very complicated, but it's the kind of memory function that marijuana interferes with. Marijuana users tell that it focuses their attention. What that means is that they can't

do two things at once. This particular memory test make them do two things at once. If you time them on that test, takes about 1½ minutes. Then they smoke three joints. day later it will still take them longer than 1½ minutes t do the same test.

In real life it's much more complicated. One of my pa tients was an airplane mechanic who worked on airplane going from Alaska to Japan. He was staying stoned all th time. His supervisor didn't know it; nobody on the jo knew it. He didn't care whether the instruments checke out or not. All he was interested in was staying stoned o the job. He wasn't thinking about anything but how goo he felt. Yet pilots and passengers were depending on tha man.

Right now some pilots in the Midwest are trying to ge the Federal Aviation Agency interested in the fact tha there are pilots and navigators and instrument testers wh are stoned. Many people in this country—literall millions—are using marijuana and are stoned. And the may be people you and I are depending on to fly a airplane or drive a bus or perform our surgery, or drive o the highway.

What do you think about the comparison tha marijuana is no worse than alcohol?

I think there is no comparison. It's hard to compare th two because there are some things about alcohol that ar worse than marijuana. Alcohol is bad for the liver. And a far as I know, marijuana probably doesn't affect the liver But overall, marijuana affects the mind much more tha alcohol, much sooner, and in a much more profound way.

How can a person, particularly kids in schools, sort ou fact from propaganda about marijuana?

There are liars and prostitutes in every field—in science in medicine, in law, and in the newspapers.

The marijuana thing is particularly difficult because th stakes are so high. That's one way of putting it, I guess Different people are putting out propaganda all the time.

Consumers' Union report (March 1975) is a beautiful example. The man who wrote it knows nothing scientifically. He selected the data and the research. It's pure

propaganda, but all the kids quote it. It has no scientific standing at all.

On the other hand, it's next to impossible to train kids to make scientific judgments of the kind that are necessary to sort out the scientific literature. I think an intelligent person can read scientific literature. There are no reputable scientific journals now that say marijuana is harmless.

The Jamaica study was noted in the "New York Times" early this year. It says, "Several recent studies of chronic marijuana users, conducted independently in half a dozen countries, one of them being Jamaica and another Greece, indicate that the drug has no apparent significant adverse effect on the human body or brain or on their functions."

To begin with, the Jamaica study was never published in reputable scientific journals. It was leaked to the newspapers in various pieces. I and my colleague Dr. Jones, who is also very involved in this, tried for months to get a copy of it. I think it was finally published in book form in Holland.

Marijuana effects have been demonstrated in reputable centers in this country, such as the University of Utah Medical Center. The head of genetics research there demonstrated the effects of marijuana on chromosomes in very difficult laboratory procedures. The people who reported that there was no chromosome damage in Jamaica have no credentials for doing that kind of study. In fact, they did it so poorly that something like half of their study had to be discarded because it was inadequate technically, which really cancels out the whole study in any reputable scientific laboratory.

The Jamaica study also says marijuana doesn't affect function. But the study was of very marginal laborers hoeing in cane fields, and we know that the main effect of marijuana is on the brain. It would be very hard to measure its effect on hoeing. However, literally hundreds of studies of all kinds of intellectual functions have been done not only in this country but all over the world, and these all show that marijuana has an adverse effect on people's ability to function.

I think that the best counter to the confusion in kids' minds is not more scientific evidence, because they're really not capable of making those judgments. There's always going to be another scientist who sells his stuff to the highest bidder. By now there are enough marijuana users in every community that people are beginning to know that he's a head, he's stoned all the time, and you can't trust him. You can't trust what he's thinking, you can't trust his judgment.

Often I ask marijuana users, Would you like your surgery done by somebody who is high? They all say, Are you crazy? They know that they're not trustworthy. And other people are beginning to know this.

It seems that the majority of our population are for the use of pot. Why is supporting marijuana use more popular than speaking out against the harm that people are doing to themselves?

I think it's so dangerous because it's so tempting. It makes you feel good. It's an easy, cheap way to feel good. You can easily be deceived into thinking it's not doing you any harm because you don't feel it. By the time it is doing visible harm, your own judgment about it is itself impaired.

Other people then become a mirror. You see healthy people who say you shouldn't do that, and your urge is to destroy them. This is just human nature. When people are doing something they want to do, they want to get rid of the person who says you shouldn't do that.

We have the same problem with alcohol, really with anything else. In the process of growing up, you have to say, Just because it makes me feel good isn't necessarily the only reason or the only thing to judge by. Ask, Is it good for my mind? Is it good for my society, for my family, the people I live with?

We hear quite a bit about the fact that smoking pot interferes with motivation, what is called amotivational syndrome. Do you believe this is a valid strike against the use of marijuana?

Yes, I think there's no question that people who use marijuana regularly over a significant period of time are clearly in a state of not being interested in anything but feeling good. There are physiological explanations for that.

Marijuana contains a chemical which affects the pleasure center. You get the illusion of feeling good. Then this illusion becomes more important than really feeling good. At the same time the effect of the drug is wearing off as you become tolerant to it. So you use more of it. And as that goes on, you either have to use stronger drugs or get another high. But this time the high is going to be a chemical or other false illusion, because you have lost the capacity to feel good in natural ways.

At that stage, in the amotivational syndrome, people lose interest in everything else but the drug. And there are literally thousands of people who are only interested in getting high. They may have shifted from marijuana to heroin. A lot of them are shifting to alcohol, and this whole false question about marijuana or alcohol is going down the drain because we're seeing younger and younger alcoholics. First they begin combining the two, then they find out they can get drunker with alcohol than they can with marijuana.

Egypt had such a terrible problem with marijuana that Nasser—even though they are a very poor country—spent a lot of money for one of the best research studies that has ever been done on marijuana. It was done by an American-trained scientist, published in 10 volumes in Arabic. It shows in a very scientific way without question that marijuana affects people's ability to function. It also showed over a long period of time a very high percentage of people shifting from marijuana to heroin.

Egypt is one of the countries that is concerned about what's happening in this country. We're a part of the Geneva Convention which says that we're going to try to control marijuana. We're decontrolling it when other countries who have had the problem for centuries, like Egypt, are trying to control it. If we decontrol it, they are going to lose what little control they have. The last conven-

tion having to do with marijuana came out very strongly with a resolution urging the United States not to decontrol marijuana.

In 1972 the National Commission on Marijuana and Drug Abuse decided unanimously to recommend that all criminal penalties be eliminated for private use and possession of marijuana. Other voices spoke out in favor of decriminalization of marijuana, but against legalization. What is your opinion about this dichotomy?

In this state [California] they said we just want to decriminalize it; we're not talking about legalizing it. I testified against it, and I said that this is just a step toward legalization. They publicly said, No, all we are asking for is decriminalization. A month later the same man was saying, Now what we have to do is legalize it, it doesn't make any sense to decriminalize something and at the same time have it illegal to grow it. Well, that's obviously a crazy law. And now they're saying, Look at how inconsistent this law is. But they're not saying, Let's go back to the old law. They're saying, Let's make it legal to grow it. That was simply a ploy, and I think everybody knew it at the time.

I think marijuana should be illegal, but it would be very hard to do that now. I think we're going to be faced with some very difficult decisions about the whole drug problem very soon. We will wake up to the fact that we're in the middle of an epidemic, that drugs spread from one drug user to the next, and that the consequences are devastating to society, to the people, to our country.

The legal procedure, which we're going to have to think about, is something like public health procedures—isolate a person for his good and for the good of society. You say to somebody, You can't use marijuana or heroin or cocaine anymore. And then it's his choice. He stops. Or if he doesn't stop, you help him stop by certain sanctions, or education, or medical or therapeutic help.

In 1971 you stated that pot use was leveling off. How does it look to you now?

Did I say that in 1971? In Berkeley the number of people using it is leveling off because we've reached the saturation point. In the university, around 80 to 90 percent use marijuana. There's another 10 percent who will never use it, such as Mormons, Orthodox Jews, etc., who won't use pot, but they won't use any other drug either.

What's happening is that the people who are using it are using more and more of it. The number of people using it may be leveling off because you have reached the available population in a particular area, but the next step is that those same people use more. Statistics show that the country as a whole is using more marijuana all the time.

What effect does marijuana have on driving?

It affects judgment, the ability to keep more than one thing in your mind at the same time, to take into account all the factors at once which have to do with driving instead of just where you are going. Particularly bad is the fact that it is often combined with alcohol. When you combine the lack of judgment, on the one hand, with poor reflexes, it's more than twice as bad.

Dr. Jones, your colleague here, is quoted as saying that by far the most significant and shocking result of the current studies on marijuana use has been the discovery of its effect on genes and chromosomes. Could you explain this?

It has been demonstrated in humans and in animals that marijuana, in socially used doses, affects chromosomes. Chromosomes are what determine our inheritance. They are also the determiners of the function of every cell. The two most striking effects of marijuana on chromosomes affect the DNA and RNA metabolism. It affects the immune cells in such a way that immunity drops way down through the social use of marijuana. And that's true, presumably, of its effect on chromosomes.

The other effects are on the germ cells, that is, the parent cells of the next generation. We know they are damaged, but it is a very hard thing to demonstrate in humans, since we don't know yet what it's going to do to the next generation. It's a fifty-year study.

I may tell high school students that marijuana damages chromosomes. As a physician I think that is a very dangerous thing to be messing with. Then someone else comes along and says, "Well, Powelson says that it damages chromosomes. That may be true, but he hasn't proved that it damages the next generation." That statement is also true. But those two statements are not equal.

Does the user develop hostility against anyone who speaks to him against using it?

Yes, that is universal. When I first began talking about it at the university, people physically threatened me and shouted at me. The situation was sometimes riotous. If you take heroin away from heroin users, or cocaine away from cocaine users, or alcohol away from people who drink alcohol, they will use any means they can to get it back.

What would you say to high school kids if you had the opportunity?

I would say that there is no evidence whatsoever that marijuana in any way is good for you. There's very strong evidence, which you can see for yourselves if you look around, that it damages the brain, that it damages your ability to think, it damages your chromosomes, it damages your immunity system—all of this at a rate of something in the neighborhood of 20 times as rapidly as alcohol.

You owe it to yourselves, to your parents, to your society, to be healthy and intelligent, and to use all your strength in the best way you possibly can. ◇

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WHY DO CHILDREN USE MARIJUANA?

What are some possible reasons that children might experiment or continue to use marijuana or other drugs?

- Boredom
- To boost self-esteem
- Peer pressure
- Experimentation or curiosity
- A need to reject parents' values
- To relax
- Pop culture promotes drug use
- Lack of positive role models
- To create a new image
- For immediate gratification
- Imitation of parents' drinking and/or smoking behavior
- For independence
- Availability of drugs
- To escape from daily stress
- To have fun

First experimenting with most drugs occurs during the final three years of high school. However, for marijuana, alcohol and cigarettes, most initial experiences take place before high school. Analysis of six-year trend data collected by the National Institute on Drug Abuse indicates that age of first use of marijuana has consistently decreased; such that, the majority of users are introduced to marijuana between the ages of 12 and 14.

WHAT IS MARIJUANA?

Marijuana is the common name for the hemp plant **cannabis sativa.** The plant may grow wild in most temperate climates or can be intentionally cultivated for legal or illegal purposes. There are more than 420 chemicals, including 61 cannabinoids, currently identified in the cannabis plant. The major mood altering chemical of these is delta-9-tetrahydrocannabilol (THC).

Marijuana varies in its strength of THC. In much of the marijuana available today there is a much higher THC potency than there was five years ago. Psychoactive effects of marijuana depend not only on the amount of THC but on the body size and weight of the user. That is, a younger, smaller person will experience more of an effect than a larger adult using the same quantity of the drug.

Marijuana is most commonly smoked; however, some users prefer to combine it with food. The psychoactive effect of marijuana when smoked occurs within minutes. When eaten, the mood-altering effect might not begin until up to an hour and a half after ingestion.

WHAT ARE THE OUTWARD SIGNS OF USE?

Outward signs of the recent use of marijuana may include:

- Redness of the eyes
- Increased appetite
- Talkativeness or withdrawal

Outward signs of chronic use may include:

- Gradual drop in the quality of school work
- Unusual or increased money requests
- Often over-reaction to criticism
- Personality changes
- Secretiveness
- Physical evidence such as cigarette papers, ashes, odor

One or more of the above signs is not enough for identification of use; most are typical of adolescent behavior. Immediate signs are not always obvious. Talking with your child on a regular basis will help you understand his/her behavior.

WHAT DOES MARIJUANA DO TO THE BODY?

The health consequences of marijuana use have been the subject of scientific and public debate for almost 20 years. Based on scientific evidence published to date, the Surgeon General of the U.S. Public Health Service concludes that marijuana has a broad range of psychological and biological effects, many of which are dangerous and harmful to health. Unfortunately, the available information does not tell us how serious this risk may be.

During March 1982, *Marijuana and Health*-1982, (the ninth in a series), was given to the U.S. Congress by the Secretary of Health and Human Services. The report reviews the health consequences of marijuana use:

- Acute intoxication with marijuana interferes with mental functioning; learning and thinking are impaired. It is a marked impediment to classroom performance.
- Marijuana produces serious acute effects on perception and skilled performance which impairs such everyday tasks as driving and other complex tasks involving judgment or fine motor skills.
- A combination of marijuana and alcohol is particularly dangerous, causing temporary changes in depth perception, concentration, time perception and reaction time.

Among the known or suspected **chronic** effects of marijuana use are:

- By-products of marijuana remain in body fat for several weeks with unknown consequences. The storage of these by-products increases the possibilities for chronic effects as well as residual effects on performance even after the acute reaction to the drug has worn off.
- Impaired immune response
- Decreased sperm count and sperm motility
- Interference with ovulation and prenatal development
- Possible adverse effects on heart function
- Impaired lung function similar to that found in cigarette smokers (indications are that more serious effects may ensue following extended use)
- Impaired short-term memory and slowed learning
- The "amotivational syndrome" has been attributed by some to prolonged use of marijuana by youth. The syndrome is characterized by a pattern of loss of energy, diminished school performance, harmed parental relationships, and other behavioral disruptions.

HINTS ON PREVENTING YOUR CHILD'S DRUG USE

There are some specific steps you can take to lessen the chance of your child using drugs. Prevention consists of:

- Setting a good example in your use of alcohol, tobacco, prescription and over-the-counter drugs;
- Demonstrating positive behavior of the many alternatives life has to offer at work, at play, in nature, through art, music, and other creative endeavors;
- Involving your children in setting family guidelines that encourage positive behavior, with fair and consistent discipline;
- Learning more about drugs so that you have accurate information to share with your children.

WHAT TO DO IF YOUR CHILD IS USING

If you suspect that one of your children may be using marijuana, discuss the issue with him/her in a calm, non-arguventative manner. Keeping communications open is of the utmost importance.

If your child is using, do not condemn the child, their peers, or deny the problem. Children need to hear clearly stated values and standards from the family. Remember, when a child is independent and self-supporting s/he can make their own decisions; however, up to age 18, your child's health is your responsibility.

Your child may not respond positively to your best efforts to prevent their marijuana use and association with drug using peers. If that is true, consider professional help or a peer-support group. You are not alone.

Being a good parent is a difficult task. But, there are community resources to assist you. Community agencies may offer: course in parenting skills and drug education; family and individual counseling; drug treatment; and referral to parent peer-support groups. Contact your local alcohol, drug or health agency. Or, contact the Alaska Council on Prevention of Alcohol and Drug Abuse, 7521 Old Seward Highway, Suite A, Anchorage, Alaska 99502.

Note: A portion of the material contained in this pamphlet was taken from *Marijuana and Health: Ninth Report to the U.S. Congress 1982.*

Related Readings

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This information has been prepared in the public interest by the Alaska Council on the Prevention of Alcohol and Drug Abuse through a grant from the Alaska Department of Health and Social Services, State Office on Alcoholism and Drug Abuse, 1984.

ALASKA COUNCIL ON PREVENTION
OF ALCOHOL AND DRUG ABUSE, INC.

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MARIJUANA

MARIJUANA

Marijuana comes from the Indian hemp plant, usually cannabis sativa. The plant can grow wild or it can be intentionally cultivated for legal or illegal purposes. Marijuana is usually seen on the street as a mixture of chopped leaves, stems, flowers and seeds. It can come in a number of different colors including brown, green, gray and red. Hashish, or hash, is a resinous extract of the topmost leaves and flowering parts of the marijuana plant.

Marijuana and Hashish

HOW USED:

Individuals who use marijuana to get high usually smoke it. Marijuana can be smoked as a cigarette (joint, reefer) or in a pipe. Some marijuana smokers also use such marijuana paraphernalia as "bongs," "smoking stones" and a wide selection of pipes specifically intended for use with marijuana.

COMMON NAMES:

There are many slang names for marijuana. Ten of the most common are: Dope, grass, herb, joint, pot, reefer, roach, smoke, stuff, and weed.

HISTORY:

Marijuana has been used as both a medical and a non-medical drug for more than three thousand years. In the United States marijuana has been used off and on as a medicine since the 1850s. Recreational use of marijuana was not widespread in this country until the early part of the twentieth century.

PHYSICAL EFFECTS:

Marijuana was not generally considered to cause physical addiction. A study carried out at UCLA, however, challenged that assumption. The study involved healthy male smokers in their early to mid-twenties. After the subjects smoked large doses of marijuana for several weeks it took more marijuana to get them to report being as high as they had been previously with less marijuana. When the subjects stopped using marijuana many of them felt nauseous and irritable and they didn't sleep well. Administering marijuana would remove these feelings. The subjects smoked an average of five and one-half two gram 2% THC joints per day for more than six weeks during the study.

There seems to be agreement on the following physical effects of marijuana: Marijuana (1) dries the eyes and the mouth, (2) increases the appetite, (3) causes a reddening of the eyes, (4) impairs one's driving ability, (5) impairs one's short-term memory while one is under the influence of the drug, (6) impacts the way stress does on the heart and circulation system, (7) raises the heart rate, (8) frequently raises the user's blood pressure, (9) produces inflammation and neoplastic changes in the airways of heavy smokers, (10) may well lead to cancer of the respiratory tract among prolonged, heavy marijuana smokers, (11) causes modest reversible suppresive effects on sperm production in men, (12) can cause tremors and startle response withdrawal symptoms in the newborn children of women who smoke five or more marijuana cigarettes per week while they are pregnant, (13) may effect chromosome segregation during cell division (although these results are a concern, their clinical significance is unknown), (14) is a fat soluble molecule, parts of which can be stored in the body for up to thirty days or more, and (15) when smoked reduces the lungs' ability to absorb oxygen.

In addition, an association has been identified between maternal use of marijuana during pregnancy and diminished birth weight in the child and the development of characteristics associated with the fetal alcohol syndrome.

Marijuana Paraphernalia

PSYCHOLOGICAL EFFECTS:

Marijuana, when taken in mild to moderate doses, tends to cause an altering of perception that includes sight, sound, touch, sense of time and taste. It can produce feelings of euphoria and intimacy. It has been reported to develop new insights in some individuals who experience its effects.

Some individuals who use marijuana become psychologically dependent on the effects of the drug. This means that the effects of marijuana have become so psychologically essential to the individual that he/she may experience emotional discomfort in the absence of the drug.

Some believe that heavy long term use of marijuana results in a loss of motivation in the user. Others disagree.

MEDICAL USES:

Marijuana had many medical uses in the U.S. in the nineteenth century. By 1937, when the first federal laws were passed to control the use and possession of marijuana, it had more or less been dropped from medical use. In the past several years more than twenty states (including North Carolina) have legalized the experimental use of marijuana to treat glaucoma and the nausea that frequently accompanies cancer chemotherapy. Efforts are now underway to develop satisfactory synthetic THC-type drugs that might be administered in place of natural marijuana.

Crises situations concerning marijuana, when they occur, tend to take the form of an anxiety reaction to the marijuana high. A calming and reassuring approach has proven effective in dissipating the anxiety.

TREATMENT OF LONG TERM INVOLVEMENT:
Individuals who have developed a psychological dependence upon marijuana may need to have individual counseling, or some kind of group therapy, to develop skills to live their lives happily without dependence upon this or any other drug.

LETHAL DOSAGE:
There is no record of a human death attributable to an overdose of marijuana. The literature does contain a report concerning a dog that died of an overdose after being given approximately 40,000 times the normal dose of marijuana.

RESOURCES:
Individuals wishing to get treatment should contact their single state agency for drug abuse services or the National Institute on Drug Abuse, 5600 Fishers Lane, Rockville, Maryland 20857. (In Charlotte, N.C., treatment services are available from Open House Counseling Service, Inc., 145 Remount Road.)

LEGAL CONTROL:
The Federal government classifies marijuana as a drug with a high potential for abuse and no approved medical use. Individual states, however, have their own laws controlling the use and possession of marijuana within their own jurisdictions. (Unauthorized possession of any amount of marijuana is illegal in North Carolina. The penalty for the first conviction of illegally possessing one ounce or less of marijuana in North Carolina is a fine of not more than $100. The penalty for illegally selling marijuana in North Carolina includes a prison sentence of no more than five years and/or a fine of no more than $5,000.)

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MARIJUANA TODAY, Rev. Ed. 1982, by George K. Russell. The Myrin Institute for Adult Education, 136 E. 64th St., NY, NY 10021.

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NOTE:
There are many differences of opinion about marijuana (i.e., marijuana use is really very dangerous; marijuana use should be decriminalized; marijuana should be legally available as a medicine, etc.). Because of these differences of opinion, marijuana issues are often emotionally charged. As a result, scientific studies can be used in efforts to influence public attitudes and social policy without, at times, apparent concern for the quality of a particular study or the applicability of its findings.

Charlotte Drug Education Center, Inc.
1416 East Morehead Street
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MARIJUANA: THE MYTH OF HARMLESSNESS GOES UP IN SMOKE

by Peggy Mann

Reprinted by the Medical Education and Research Foundation

MARIJUANA: THE MYTH OF HARMLESSNESS GOES UP IN SMOKE

New medical research puts a match to the myth that smoking marijuana is not harmful. The real dope is that the daily habit is damaging to the body as well as the mind.

by Peggy Mann

Is marijuana just the "innocent high" some have made it out to be? New medical research into the effects of this widespread drug points to heretofore unknown risks, as this exclusive two-part Post *series will show.*

"It's unreal," the school guidance counselor told me. "The kid looks you straight in the eye and says—full of conviction—'Well, pot doesn't hurt *me*!' His grades have slid from As and Bs to Cs and Ds. He's been put off the basketball team because of poor performance. He's irritable, hostile, always tired, feels depressed. He cares less about everything. He has a cough, chest pains. He's really going down the tubes. But blowing grass every day, he insists, has no relation to any of this.

"To my mind, the scariest thing about marijuana is that the user can't see what the drug is doing to him. Or, if he does admit to a symptom, he shrugs it off. Yesterday a seventh grader told me, 'I know pot's done bad things to my memory. But I don't really need my memory because I decided I'm not going to college.' "

The guidance counselor is Rick Gibson from Goddard, a small town in Kansas. I met him at lunch in another small Kansas town, Wellington. We were both attending a two-day "Grass Roots Conference on Grass." Wellington's population is 8,500. The school auditorium has 1,000 seats. And both days there was standing room only. Physicians, teachers, school administrators, guidance counselors, psychologists and parents came from all over Kansas and from nearby states to attend.

The Wellington conference was part of a burgeoning new movement throughout America. Schools and parents' groups are waking up to the fact that: (1) marijuana abuse has reached pandemic proportions among our youth; (2) something must be done about it; and (3) they are the ones who must do it. They realize that a vital first step is to educate themselves about the rising tide of medical evidence showing that pot can have serious psychological and physical effects. It can cause cellular damage and impair lung function, the reproductive system and the brain. Furthermore, the younger the user, the more deleterious the effects.

The roster of speakers at Wellington was an impressive one. The first speaker after lunch was Dr. Harold Voth, senior psychiatrist and psychoanalyst at the famed Menninger Foundation in Topeka, Kansas. He has studied the psychopathology of marijuana in depth for the past eight years. Coincidentally, his first point carried on from the one the guidance counselor had just made to me.

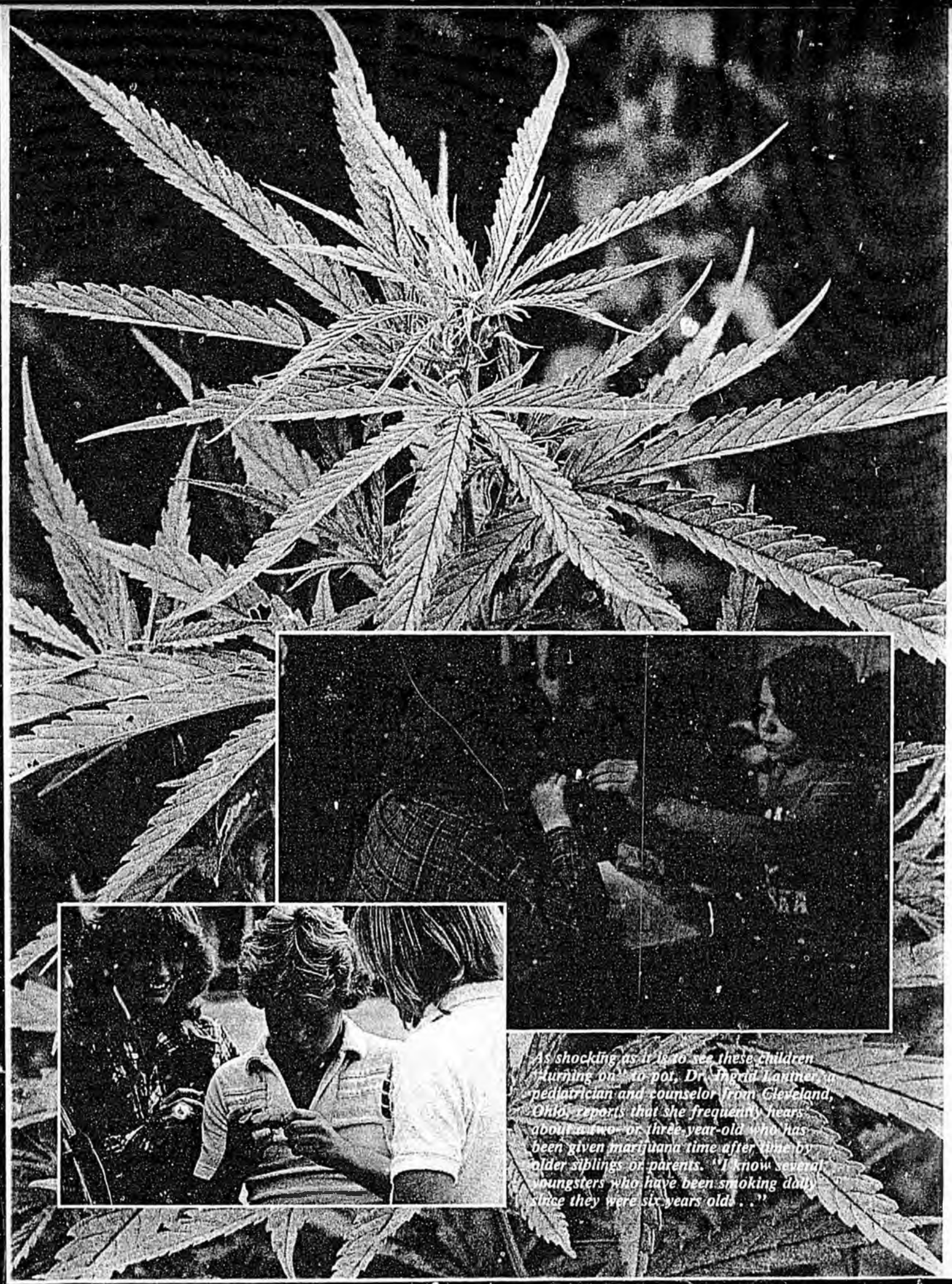
"Marijuana produces a wide spectrum of symptoms," said Dr. Voth. "Some affect some people; some affect others. And there are those who seem to 'get away with it' reasonably well, for a while. But there is one truly pernicious symptom—specifically related to marijuana—which seems to be evident in *every* chronic pot user, youngster or adult. This is the extraordinary refusal to accept the hard scientific evidence about the harmful effects of marijuana. The user will scoff at the evidence, twist it, pervert it, call it 'reefer madness'—anything except look it straight in the face.

"This may be one reason much of the media have, until recently, done shockingly little to relay the medical findings about the harmful effects of marijuana to the American public.

"In my opinion, marijuana use in the United States today constitutes a national crisis, and all-out efforts from all segments of our society are essential in view of the enormous harm being done to millions of Americans, particularly our youth."

Statistics on youth drug abuse clearly show why Dr. Voth's prescription for "all-out efforts" must be heeded on a national scale. For example:

- According to a report published by the House of Representatives Select Committee on Narcotics Abuse and Control, "The United States is the most pervasive drug-abusing nation in history and marijuana is our most pervasive illegal drug of abuse." Says Congressman Lester Wolff (D-NY), chairman of that committee: "Our young people are the first in all history to have used marijuana on a mass scale. Neither this nation—nor any other nation—has ever before faced a problem that is so insidious and so dangerous."
- Last year, according to the federal government's drug abuse network, marijuana accounted for the second largest number of admissions to our federally funded drug treatment facilities, and 33 percent of these had started their pot use before age 14.
- According to a recent national



As shocking as it is to see these children "turning on" to pot, Dr. Ingrid Lantner, a pediatrician and counselor from Cleveland, Ohio, reports that she frequently hears about a two- or three-year-old who has been given marijuana time after time by older siblings or parents. "I know several youngsters who have been smoking daily since they were six years olds . ."

drug abuse survey covering ages 12 and up (1976-1977), use of marijuana is twice as high for youngsters as for adults, and use by youngsters ages 12 to 17 increased by nearly a third in one year. (A new national survey has just been carried out by the National Institute on Drug Abuse and, according to Dr. Robert Peterson, assistant director of research, "We would be very surprised if this did not show an increase in use, especially among young users.")

- According to the High School Senior Survey, the only national drug abuse survey taken every year since 1975 (representing every state except Alaska and Hawaii):
  - In 1979, one out of ten high school seniors smoked pot daily, or almost daily—an 80 percent increase since 1975. Of these, daily users averaged 3½ joints (marijuana cigarettes) a day; 13 percent smoked more than seven joints daily.
  - Of the 50 percent of seniors who smoked pot at all during 1979, 37 percent said they "usually stay high three-to-six hours." (Add to this the fact that marijuana is up to ten times more potent than that smoked a decade ago.)
  - Forty-nine percent of all seniors who used pot "during the past 12 months" also used one or more additional illegal drugs during that period.

Popular drug-culture magazines teach how to grow your own, how to smuggle dope into the U.S., how to dress for pot parties, how to get around the law. Their advertisers reach a market of young people with money to spend, and the drug paraphernalia in their pages is available by mail—portable head shops, accessible to young residents of even the smallest, most remote communities. (Paraphernalia shops have been outlawed in Indiana.)

It is worth noting that this study surveys only those students who have made it to the end of their senior year. Drug use among dropouts is notably higher than among those who finish high school. (In some areas, for example, grocery store delivery boys no longer take coffee breaks, but "pot breaks.") Also not included are those who were not in school the day the survey was taken. Truancy is another "symptom" of regular pot use.

All recent state, city, suburban and rural surveys show that pot use has increased rapidly among youngsters of all income levels and all grade levels, with the highest increase at junior high school age. Throughout the country, surveys show that junior and senior high school kids are getting stoned on the way to school, during school, after school and at home—where they often "smoke out the window" or burn incense to cover the smell. One local newspaper series on the subject started: "For many middle school students, marijuana has replaced Wheaties as the morning 'meal.'"

In some areas, pot use starts as early as the fourth and fifth grade. If the saying is true, "as Maine goes, so goes the nation," it is worth noting that a 1979 two-county survey in rural Maine showed that in the fourth grade, 6 percent had tried marijuana at least once and one percent had used it "many times." ("And," says Mel Tremper of Maine's Office of Alcohol and Drug Abuse Prevention, "as drug use goes, we in Maine are kind of behind the times.")

California is a state "ahead of

"The target for drug paraphernalia in the 1980s is ages 6 to 16," the operator of one of Florida's largest head shop chains recently admitted, claiming it was "an industry decision." Organized campaigns of this sort, added to tremendous peer pressure, are misleading young people into believing that pot smoking is a normal part of growing up.

the times" in this area. Dr. Richard Blum, one of the country's foremost authorities on drug abuse, studied 3,200 school children in California and found that some started pot use in third grade. Said Dr. Blum: "The phenomena that appear in California generally appear in the rest of the country several years later." Dr. Blum's survey was conducted in 1976.

For the past two years, pediatrician Dr. Ingrid Lantner has been speaking on the subject of marijuana at schools in the suburbs of Cleveland, Ohio. She speaks two or three times a week, often to fifth and sixth graders. She always asks them: "How old is the youngest child you know who has smoked marijuana?"

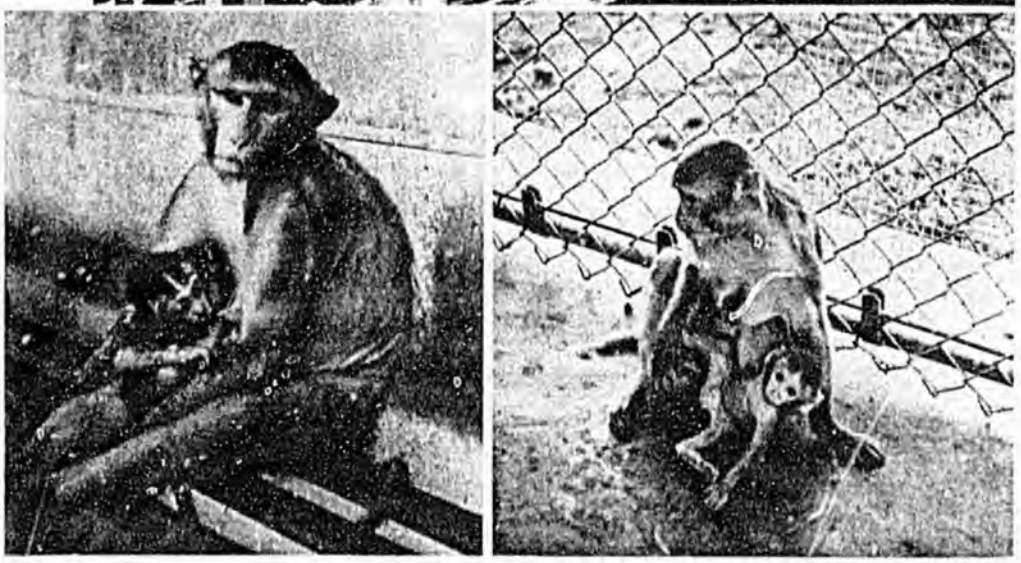
Dr. Lantner told me: "I have never asked this question without hearing about a two- or three-year-old who has been given marijuana by older siblings or parents—and not only once. I know several youngsters who have been smoking daily since they were six years old. In all these cases, the parents are users. I have never known of a grown-up who would give a child that age a tobacco cigarette or any other drug."

Dr. Lantner also asks for written questions from her young audiences. Every time she speaks she receives one or two questions which indicate that parents give pot to their young children. Two typical questions:

"I am ten. My parents let me smoke pot since I was six. Will my eggs be damaged?"

"My brother smoked M.J. since age seven but not every day. Will he have his growth affected? He is now 11. He gets the M.J. from my mother."

Another question Dr. Lantner often receives from fifth and sixth graders is: "What shall I do if someone physically forces me to



Rhesus monkeys exposed to the human equivalency dose of one to two joints per day for three years exhibited a loss of drive, motivation and interest in the care of their offspring. A picture of a control, or non-drugged, rhesus shows a rhesus mother nicely nursing her baby. But the THC-treated mother (right) has been exposed to the human equivalency dose of one to three joints a day. Typically, these mothers didn't nurse their babies, groom them, retrieve them or cuddle them as the control mothers did. Dr. Ethel Sassenrath at the Primate Research Center of the University of California, who conducted the experiments, also noted that the THC-exposed babies showed deficits in attention and over-concentration on different stimuli in the environment—the types of deficits of behavior which indicate that the central nervous system had been affected in early development.

smoke pot?"

"School principals tell me," says Dr. Lantner, "that after a ball game, a group of potheads—older students—often come around to sell drugs, and they're very aggressive with the little ones, insisting they buy and smoke on the spot. This happens in a nice, upper-middle-class area in the suburbs of Cleveland."

Nor are the suburbs of Cleveland Ohio, the only area in the country where parents are giving pot to very young children. Take Missouri, for example. Ed Moses, drug information officer of the state of Missouri, works full time lecturing and teaching about drug abuse. "Every year drug abuse is affecting younger age groups," he told me. "They commonly start feeling the pressure to turn on as early as the fifth and sixth grades. Also, every year the marijuana is getting stronger and more easily available in larger quantities.

"I think the most disturbing thing I've found is many parents' attitude that marijuana is so harmless that it's okay to reward their three- and four-year-old child with getting high.

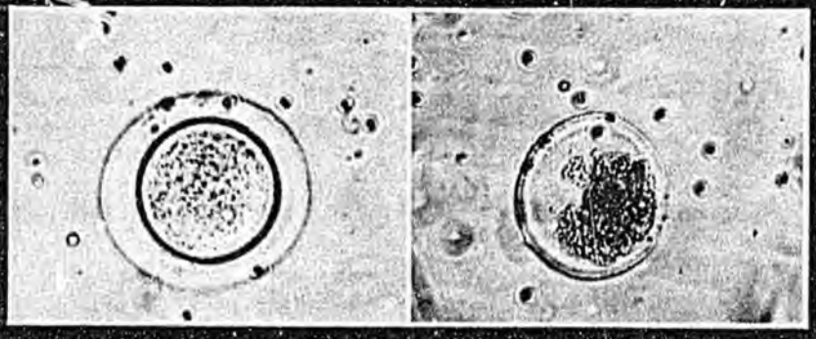
"For example, at parties, the parent will let the three- to five-year-old child carry the joint around to the toking [pot-smoking] guests. And, as a reward, the child is allowed 'to take a hit' and get stoned. This is becoming more and more common among young parents who are heavy users.

"The youngest I have seen in a home was with a couple in their early 20s who got their nine-month-old baby high by 'shotgunning' the child [turning the cigarette backwards with the lit part in the mouth so that a concentrated rush of smoke can be blown into someone else's mouth or face]. The father told me, 'We like to get Annie high so she won't be afraid to walk.' I pointed out that she was so stoned she couldn't even crawl. The father said, 'Well, that's cool. At least she's not afraid to try.' 'She boogies around when she gets high,' the mother said, laughing. This meant that the baby bounced around a little while. Then she sat—spaced out."

A kindergarten teacher in a South Texas town told me, "My

THC-Injected Mice. Produce Abnormal Eggs

Current research indicates that THC (the active agent in marijuana) may induce genetic mutation. One recent experiment involved mouse ova (female reproduction cells, commonly called "eggs"). Two groups of 26-day-old female mice were used in the experiment. The control group was allowed to proceed with a normal routine while the test group was injected with daily doses of THC. The animals were then allowed to mate with non-treated young adult mice. Forty-eight hours after mating, the animals were sacrificed and the fertilized eggs were recovered from the oviducts. Abnormal cells occurred in 37.5 percent of ova recovered from the THC-treated mice, compared with 10 percent in those obtained from the controls.



A normal ovum (left) shows the chromatin (that part of the cell nucleus that is composed of DNA and is the carrier of the genes) to be finely granular and evenly dispersed throughout and responsive to fertilization and normal cell division.

In stark contrast is the abnormal ovum (above), taken from the THC-treated mice, where the chromatin has clumped together. The fact that it has coagulated is an indication that it is damaged and probably is a nonviable chronosomal substance, in which case there would be no pregnancy at all.

A normal fertilized ovum demonstrates predictable cell division.

Irregular shapes and sizes of fertilized cells appear in the mice ova in the THC-treated group 48 hours after mating.

It was the conclusion of this research that THC does act as a mitotic (dividing cell) poison and therefore is considered a chromosomal mutagen. It is also important to note that unlike male sperm, which is replenished during the entire life of the male, the number of female eggs is determined at birth and, once they are damaged or destroyed, they can never be replaced—the damage is permanent.

children don't smoke pot. But the first grade teachers tell me that some of *their* children come in stoned—always the ones with older brothers and sisters."

Maryland is so "typical" that it is often referred to as "America in miniature." Certainly the 1978 Maryland statewide survey reflects what is being found in local surveys throughout the country: "Students began using one or more illegal drugs at about one year earlier than the same grade level use in the last Maryland survey (1975)." And the "one" drug is invariably marijuana. Most local surveys show that, each year, initial marijuana use drops one year lower.

Older siblings are the chief source of supply for very young users. Because the myth of marijuana's "harmlessness" has so permeated our society, youngsters often feel they are doing their smaller brothers and sisters a favor by getting them high. There is also another motive. If the younger child gets involved, he or she won't "narc" (tell Mom and Dad).

It is quite possible for Mom and Dad to be unaware of the fact that their children are stoned. With marijuana use it's easy to "hide the high" or to "come down" by dinner time. The clearest tell-tale symptom—red eyes—is handled by kids via eye drops. (The eye drop industry reports a boom in sales.) Youngsters who use a local swimming pool have an easy excuse—"chlorine in the water"—even though the closest they may have been to the water was hanging out in the locker room blowing grass.

There are, of course, discernable symptoms of the youngster who is a heavy pot user. Unfortunately, most of them are so much like the "blow up" symptoms of normal adolescence that many parents tend to disregard such as merely something their child will "grow out of." But this is not likely to happen unless the child gets some firm, supportive help from parents and from the school.

Parents should realize that even the "straight" kids (non-drug users)—who represent about 50 percent of most surveys of junior high and high school classes—are under constant peer pressure to "Try it: It's great." And this pressure to start pot use comes not only from peers. All kids are affected by aspects of adult industries which make drug use in general—and pot use in particular—seem like a normal part of growing up in America today.

For example, a recent survey in Atlanta, Georgia, showed that while one third of non-drug-using kids listen to rock music on the radio three hours or more a day, virtually *all* drug-using youngsters listen three or more hours a day. Some reported: "I listen all the time when I'm home." In addition, they have favorite records and cassettes that they put on when they're high and "float with them."

The same Atlanta researcher, Dr. Fred Crawford, studied the contents of rock lyrics to determine what messages they contained suggesting or supporting drug use. He found that more than half of the current rock songs had messages condoning or suggesting the use of drugs, and that many students start listening to rock music at about the time of first use.

And what do they hear when they listen? There are countless songs with "do drug" messages such as this from Eric Clapton:

Cocaine, cocaine
She's all right.

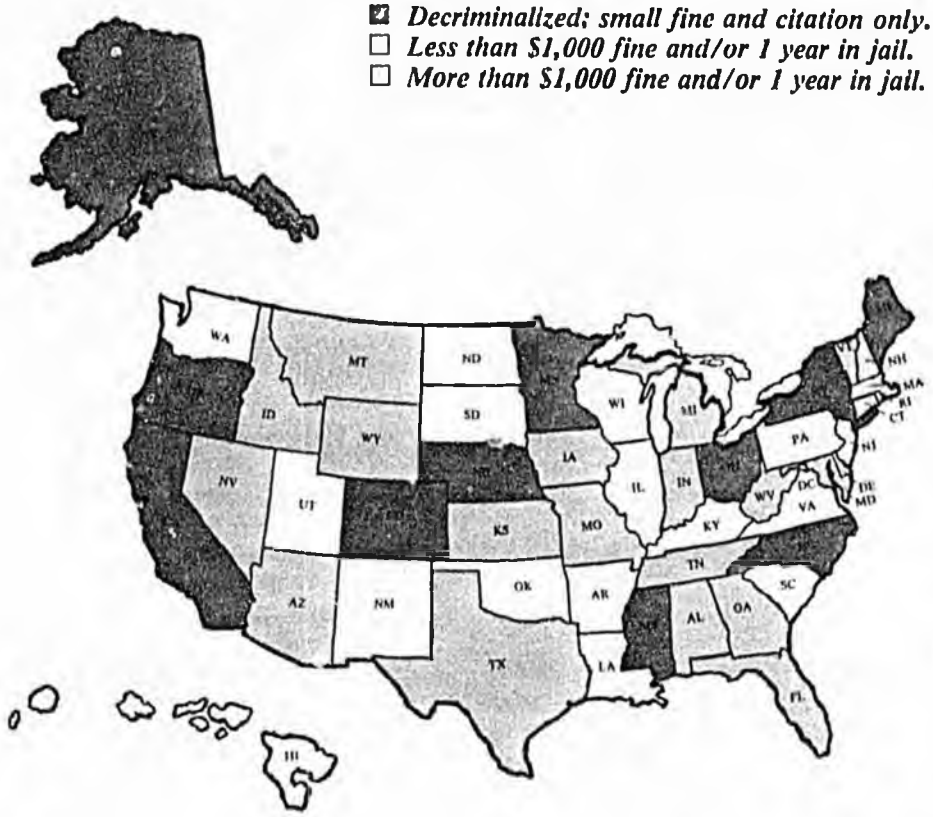
And this from Dr. Hook's Medicine Show, the *Sloppy Seconds* album ("killer weed" is marijuana):

Some men need some killer weed
And some men need cocaine
And some men need some cactus juice
To purify their brains.
Blow your whistle,
Bang your gong,
Roll up something to take along
Feels so good it must be wrong
Freebin' at the freakers' ball.

Another example of the "mes-

First-time marijuana-possession penalities for 1 ounce or less:

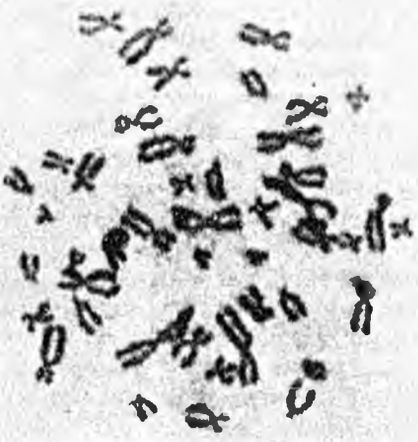
- ☑ *Decriminalized: small fine and citation only.*
- ☐ *Less than $1,000 fine and/or 1 year in jail.*
- ☐ *More than $1,000 fine and/or 1 year in jail.*



In most areas, laws for possession of an ounce or less of marijuana (30 to 60 joints) for personal use are not enforced. Some say this is reason to relax the laws (decriminalization) or to eliminate them (legalization). However, in states which have decriminalized pot, law enforcement officials point out that marijuana use among youths has escalated greatly, and traffic accidents and drug-related crimes have increased dramatically.

sages" youngsters receive from the adult community comes from the drug paraphernalia industry—now a $3 billion business. A highly profitable line is the "kiddie" drug paraphernalia, which includes such items as baby bottles and "Catch-a-Buzz" flying discs which double as pot-smoking devices, skateboards and kiddie belt buckles for "hiding your stash" (your supply of pot), comic books which show how to cut and snort cocaine and *McGrassey's Reader*, an easy-to-read, 20-page primer which includes clear directions on how to roll a joint, a pot vocabulary, advice on what to wear to your first pot party, plus a packet of alfalfa "practice grass." For more advanced readers there is *The Whole Drug Manufacturers' Catalog*, one-third of which is devoted to "Kitchen Chemistry and Bathtub Dope: How to Produce Drugs from Non-Prescription Items and Household Chemicals in Your Kitchen Without Prior Chemical Knowledge."

In most states such items are legal and can be found in various varieties of stores, including posh gift shops, boutiques, record stores, flower shops and stores which specialize in magic, Oriental gifts, leather goods, smoking goods, etc., as well as in the "head shops." And some head shops advertise openly in school newspapers as "novelty shops." The kids know what they are, but (presumably) the teachers don't. One of the biggest head shop chain operators in Florida recently told Florida state legislator Mary Ellen Hawkins: "The target for drug paraphenalia in the 1980s is ages 6 to 16." He said this was an industry decision.



A. Non-marijuana smokers have more white cells with 46 chromosomes.

B. Marijuana smokers have an increased percentage of cells with fewer chromosomes.

While a normal cell has the typical complement of 46 chromosomes within its nucleus (left), recent experiments indicate that heavy-marijuana smokers have marked increases in the number of cells with micronuclei (nuclei with less than 46 chromosomes, as pictured right). The experiments were performed to determine the effects of marijuana on human lymphocytes (white blood cells, which are a major part of our bodies' defense systems). Five volunteers with histories of chronic marijuana smoking were used. They ranged in age from 22 to 32 and had histories of smoking at least ten marijuana cigarettes per week for six years or more. Seven healthy students who had no history of smoking marijuana served as the control group. After repeated periods of smoking followed by deprivation, blood samples were obtained from all subjects in the test group. Similar samples were obtained from control subjects on the same day. The cells from the non-marijuana smokers showed a 15 percent incidence of micronuclei, while the cells from the marijuana smokers showed a 36 percent incidence of micronuclei. Dr. Akira Miroshima of Columbia University noted that the marijuana smoker might run a greater risk of disease, since THC lowers our resistance to infection.

What does all this mean in terms of our youngsters' health? And what can parents look for as possible signs or symptoms of chronic pot use among youngsters?

The psychological symptoms are often the first to manifest themselves. These include decreasing school performance; increased irritability ("stop *hassling* me" flared out for no justifiable reason); a general apathy; depression; drastic, inexplicable mood changes; feelings of isolation; a cutting off of communication between parent and child and a general loss of interest in everything except pot smoking and the accompanying "kiddie drug culture."

There are two very common physical symptoms: a chronic cough—a bothersome, constant hacking—and chest pains. Says Dr. Ingrid Lantner, "I have yet to see a teen-age tobacco smoker complain of chest pains, but it's quite common among pot smokers. School nurses tell me this, too."

However, it is the nonvisible physical symptoms which may be the most damaging. And this is the information which is finally crossing the chasm between the scientific community on one shore, which has been putting forth these findings at ever-increasing rates, and the general public on the other shore. For years this chasm has not remained empty. It has been industriously filled with misinformation, distortion and perversion of the facts and, at times, even outright lies emanating from pro-pot organizations and individuals whose purpose seems to be to discredit the findings which prove that pot is harmful and to make it seem an essential and harmless ingredient of the "now" way of life.

Because of this constant surge of misinformation, which is still heard loud and clear throughout the land, pot smokers often have pat answers when confronted with the warning signals now coming loudly and clearly from the scientific community.

One common "turnoff" of these findings is the shoulder-shrug comment, "For every study showing that pot is harmful, there's another showing it's harmless."

This is simply not true.

One of the world's most knowl-

edgeable experts in the field of marijuana is Dr. Carlton Turner, director of the Federal Marijuana Project funded by the National Institute on Drug Abuse (NIDA). Dr. Turner and his associate, Dr. Coy Waller, have just completed a hefty two-volume work: *Marijuana: An Annotated Bibliography*. The first volume has already been published by Macmillan; the second will be published this summer. In preparing these works, Dr. Turner abstracted more than 5,000 scientific publications on cannabis (the plant from which marijuana, hashish and hash oil are prepared). He says: "As a scientist, I have to be objective. I am not a crusader for or against any drug. I am for evaluating any drug on its merit, which I base on all scientific publications about that drug. There is not a single paper on the crude drug marijuana which gives it a clean bill of health, not a single paper to support it as an innocuous drug.

"A widely quoted study of 30 Jamaican cane workers was never published by a scientific journal. It could not stand the scientific review process.

"There *are* some reports on *individual* cannabinoids indicating possible therapeutic use." (Cannabis contains 61 known cannabinoids—substances unique in nature, found only in the cannabis plant.) "However, it must be remembered that any drug has some side effects, and with the broad biological action of the cannabinoids at the cellular level, the side effects may outweigh the benefits in long-term use. This is the reason that marijuana has no place in modern medicine. Using marijuana would be like giving people molded bread to eat to get penicillin.

"Media, with some exceptions, have not taken the time to understand the nature of the crude drug marijuana. If you attend a conference and there are 15 scientific papers cautioning against the use of marijuana, and *one* saying that a single extracted cannabinoid might be useful in a therapeutic area, the media headline this by saying that *marijuana* has been found to be useful. The findings are reported in such a way that the public is led to believe joints of street pot are being smoked by people with glaucoma or by cancer patients to control nausea after chemotherapy treatments, when the research is actually being done with a synthesized THC capsule. And by the time this 'news' sifts down to the school yard, you have kids saying that pot cures cancer, pot cures nearsightedness and pot cleans out your lungs after you smoke tobacco cigarettes." (The latter comes from early findings which indicated that marijuana might be helpful in cases of asthma. Further research clearly showed just the opposite is true.)

"Incidentally, why the media have generally been so 'up' about publicizing the possible medical benefits of marijuana and so 'down' on relaying the consistently emerging evidence concerning the harmful effects of marijuana is a matter to be comtemplated."

Another common argument of pot-smoking youngsters is this: "You have your martini, so why can't I have my pot?"

Dr. Nicholas Pace has a solid answer for this question, and he is well qualified to give it. Dr. Pace is the co-founder and past president of the New York City Affiliate of the National Council on Alcoholism. He is also one of the founding directors of the American Council on Marijuana and Other Psychoactive Drugs.

Dr. Pace points out: "There are two important differences between alcohol and marijuana. First, alcohol has a single chemical, and it is water soluble. One ounce is metabolized and is completely excreted from the body within 12 hours.

"What about pot? Youngsters like to consider it a 'natural weed.' Some even believe it to have health-giving properties. In reality, however, cannabis is an extremely complex crude drug containing 421 known chemicals. When you smoke a joint you are combusting these chemicals into hundreds of other different compounds. And we don't know how they are affecting the body.

"We do know, however, that among the 420 basic chemicals are

The only long-term (20-year) study of the effects of THC on the male reproductive cell (sperm) was conducted in the small laboring village of Piraeus, Greece, by Dr. Marietta Issidorides and Dr. Costas Stefanis of the University of Athens, Greece. Spermatozoa from nonsmokers and from chronic hashish smokers (hashish has a high concentration of THC) were photomicrographed. Normal spermatozoa from a non-hashish-smoking male show a proper density, indicating that it is rich in protein and other essential chemical substances. In the center and right panels, sperm taken from a hashish-smoking male shows a definite breakdown of protein substances and a clumping together of chromosomal material. The research team also noted changes in the ultrastructure of the spermatozoa of chronic hashish-smoking males which could result in genetic disturbances or prevent fertilization.

61 known cannabinoids (new ones are being discovered all the time), and so far scientists have studied only a few of them. We know that at least four of the cannabinoids are psychoactive, or mind-altering. But a few of the nonpsychoactive cannabinoids which have been studied thus far appear to be even more harmful to certain organ systems than the psychoactive ones.

"Therefore," says Dr. Pace, "the first important point to be kept in mind is that even the so-called 'NIDA marijuana' used by scientists is, in fact, a Pandora's box of unknowns."

"NIDA marijuana" is grown on a well-guarded five-acre "pot farm" on the outskirts of the University of Mississippi. This project, funded by the National Institute on Drug Abuse and directed by Dr. Carlton Turner, supplies to researchers marijuana which has a relatively stable Delta-9-THC content of about 2 percent. (This is the chief psychoactive cannabinoid in marijuana.)

Dr. Pace points out that so-called "good street pot" has a four, five or even six percent THC content. Therefore, sobering as the research findings are, they gain an even greater impact when we realize that they represent work with THC half as potent as that which many of our youngsters are smoking regularly today.

"The second important point regarding marijuana," says Dr. Pace, "is the fact that it is fat soluble, like DDT. And we have, of course, banned the use of DDT because it accumulates in body cells and organs.

"The cannabinoids are not only fat soluble. They are, in fact, lipophilic—fat loving. The fatty sections of cells and membranes and the fatty organs of the body act like magnets attracting the cannabinoids. The cell membrane—the coating surrounding the cell—is at least 60 percent fat. When the fat-soluble cannabinoids dissolve in the cell membrane, they make it difficult for the most important constituents of the cell, the proteins, to enter. And cannabinoid clogging of the cell has additional deleterious effects.

"What about the fatty *organs*? It should be remembered that the chief fatty organs of the body are the gonads (sex glands) and the brain. Indeed, the three-pound human brain is composed chiefly of fat. As one prominent researcher once noted: 'We're all fatheads, from that point of view.' "

Dr. Pace and every other marijuana researcher I have interviewed agree that the fat solubility of marijuana is the most important—and ominous—single factor about this drug.

Why? Dr. Pace puts it this way: "The most studied cannabinoid, the popular 'Delta-9,' has been traced radioactively in the body in human and animal studies. All the studies show that it takes three days to a week for the body to rid itself of *half* the THC in a single joint and much longer (some studies show up to 30 days) to get rid of all of it. This means that even if a youngster smokes only one joint a weekend, about half the THC and other cannabinoids *remain* in the body. Half the cannabinoids in next Saturday night's joint are added to the first. And so on, for a smoke-filled series of Saturday nights."

Dr. Robert C. Gilkeson, who has spent 15 years in neurophysiologic research, puts it this way: "No drug or chemical improves the normal cell. Marijuana is a known intoxicant. Toxic means poison. Anyone who smokes or ingests more than the equivalent of one marijuana cigarette every 30 days will accumulate an acute neurotoxic substance in his or her body."

What are the results of "cannabinoid accumulation?"

A single article can only touch the iceberg's tip. This becomes clear when picking up a 777-page volume, *Marijuana: Biological Effects*, published by Pergamon Press. This contains 50 scientific papers given at the two-day Reims Conference held in France in July 1978. The conference was limited to marijuana's effects on four areas: the lungs, the reproductive system, the brain and the cells.

The September issue of the *Post* will discuss these four areas in depth, as well as give some useful pointers for parents and other interested adults who wish to combat this "grass fire" of marijuana use among our young people. ✖

PUTTING A MATCH TO THE MARIJUANA MYTH

Most kids are fully convinced that the use of marijuana is not harmful. But new medical research proves them dead wrong.

by Peggy Mann

We have found that students in the lower grades will look their counselors straight in the eye and say—with full conviction—"Pot doesn't hurt me!" But the latest medical research has determined that marijuana can cause cellular damage and impair lung function, the reproductive system and the brain. In the conclusion of this article, we take a closer look at these four areas of abuse--and offer suggestions to parents and other adults interested in combating this "grass fire" now raging through our schools.

Although one in every ten high school seniors admits smoking pot daily, and in some areas pot usage now starts as early as the 4th and 5th grades, the highest usage of all is in the 18- to 25-year age group.

Marijuana and Cellular Damage

Many scientists, including pioneer "pot researcher" Dr. Gabriel Nahas, consider the reports on marijuana's impairing effects on body cells to be the most alarming because, as Dr. Nahas says, "they are the underlying cause of all the other deleterious effects that have been reported."

Not only do cannabinoids clog the cells, inhibiting their functions to some degree, but many studies have shown that heavy pot smokers have an abnormally large number of abnormal cells.

Dr. Akira Morishima, of the Columbia University College of Physicians and Surgeons, has done studies on the increased incidence of cells in marijuana smokers which have less than the normal number of chromosomes and which tend to revert back to the normal level after the individual has stopped smoking pot. In more recent studies, published in June 1980, Dr. Morishima found that THC disturbs the *movement* of chromosomes which, he says, "probably accounts for the production of cells with an abnormal number of chromosomes." A similar finding has just been published by Dr. Arthur Zimmerman in Canada, using an entirely different methodological technique.

Pot advocates are swift to "discredit" chromosome studies by saying that "aspirin and coffee also cause chromosome breaks." Dr. Morishima points out that his studies did not relate to chromosome *breaks*. Furthermore, in the 1980 studies he used the same technique to test the effects of aspirin, caffeine and alcohol on chromosome movement. He also used "comparable doses," except that in the case of alcohol, "we went up to 100 times the equivalency dose." The result? Neither aspirin, caffeine nor alcohol produced abnormal movement of the chromosomes.

As early as 1973, Dr. Nahas found that THC lowered the rate of cell division by diminishing the cell's ability to make DNA, RNA and essential proteins. DNA is the all-important genetic material of the cell. RNA controls gene "expression." These findings have since been replicated by scientists in 12 important research centers in the U.S. and abroad.

Said Dr. Nahas: "These findings indicate that the pot smoker may not only be damaging his own mind and body, but may be playing genetic roulette with his or her unborn children."

Marijuana, Sex and Reproduction

There are other ways in which pot smokers may be damaging their unborn children.

As noted, cannabinoids collect in the fatty gonads *and* in the brain. In the brain, THC seems to affect the hypothalamus which, in turn, affects the pituitary, a pea-like structure at the base of the brain which is a control center for sex and reproductive hormones.

It is not surprising that this double-barreled influence on the reproductive system should result in some dysfunction and abnormalities.

A sexual performance study of 500 pot-smoking men was made by Dr. Robert Kolodny of the Reproductive Biology Research Foundation in St. Louis. He summed up: "The general trend was that with increasing use,

there were lower rates of sexual activity and a lower frequency of orgasm." A study of 1,238 male users in India showed similar results.

Other researchers have shown that marijuana smoked in moderate to heavy doses results in an abnormally large number of abnormal sperm. And this is dose-related. The more joints smoked, the more abnormal sperm there are.

Dr. Carol Grace Smith did a recent study on male rhesus monkeys. Both males and females of this breed have a reproductive system close to humans. "In fact," says Dr. Smith, "under the microscope, rhesus sperm are almost indistinguishable from human sperm." She gave male monkeys the "rhesus THC equivalent" of one to two joints a day. She summed up: "THC profoundly inhibits testosterone and hormones which stimulate the sex organs, bringing them down to the level of a castrated animal. One dose 'shuts down production' for as long as 24 hours."

Testosterone is the all-important male sex hormone. A number of other human and animal studies have also shown that THC lowers the testosterone level in males.

There has been only one study made on long-term (20-year) human male cannabis smokers. The researcher, Dr. Mariette Issidorides, of Greece, summed up: "Cannabis interfered with protein substances essential for the normal development of the sperm, and it altered the metabolism of the sperm cell, thus possibly affecting expression of the genetic material."

Since males produce so many millions of sperm, all indications are that, if the pot smoker ceases and desists, sperm return to normal. Females, however, may be another matter. An infant girl is born with her lifetime supply of eggs. If these are damaged, there's no replacement. And cannabinoids collect in the ovaries, a fact proved by radioactively tagged THC. What effect might this have on the eggs? Thus far, the only researcher to have delved into this question is Dr. Akira Morishima. He worked with "teen-aged" female mice. He gave them miniscule mouse-size doses of THC. Scientists figure in "human equivalency doses," which can be "checked out" by testing THC in blood levels. If a mouse has a percent of THC in its blood which is equal to the percent of THC a human adult has in his or her blood after smoking—for example, one joint at 2 percent THC—then this is the "human equivalency dose." According to human equivalency charts just published by another "pioneer pot researcher," Dr. Harris Rosenkrantz, Dr. Morishima's female mice received the THC "equivalent" of an adult woman smoking two joints a day. In his report, published in July 1979, he revealed that in the control group, very few of the mice had abnormal eggs. But in the THC-exposed group, about half the eggs were dying or had died. "And," said Dr. Morishima, "of those that lived, 20

Magazines extolling the joys of drug taking are found on newsstands throughout the U.S. As some fold, others are born. The slick **High Times** *boasts 4 million readers. Such publications make illicit drugs seem as "normal" as popcorn and apple pie.*

or 30 percent looked unhealthy."

Dr. Ethel Sassenrath at the Primate Research Center of the University of California has done other types of investigation into pot's effects on the female reproductive system. She works with female rhesus monkeys, whose reproductive system is very close to the human female's, including a 28-day menstrual cycle. Every day for three years—she even came in on Christmas—Dr. Sassenrath fed her monkeys the THC human equivalency dose of one to two joints. (She gave THC on raisin cookies.)

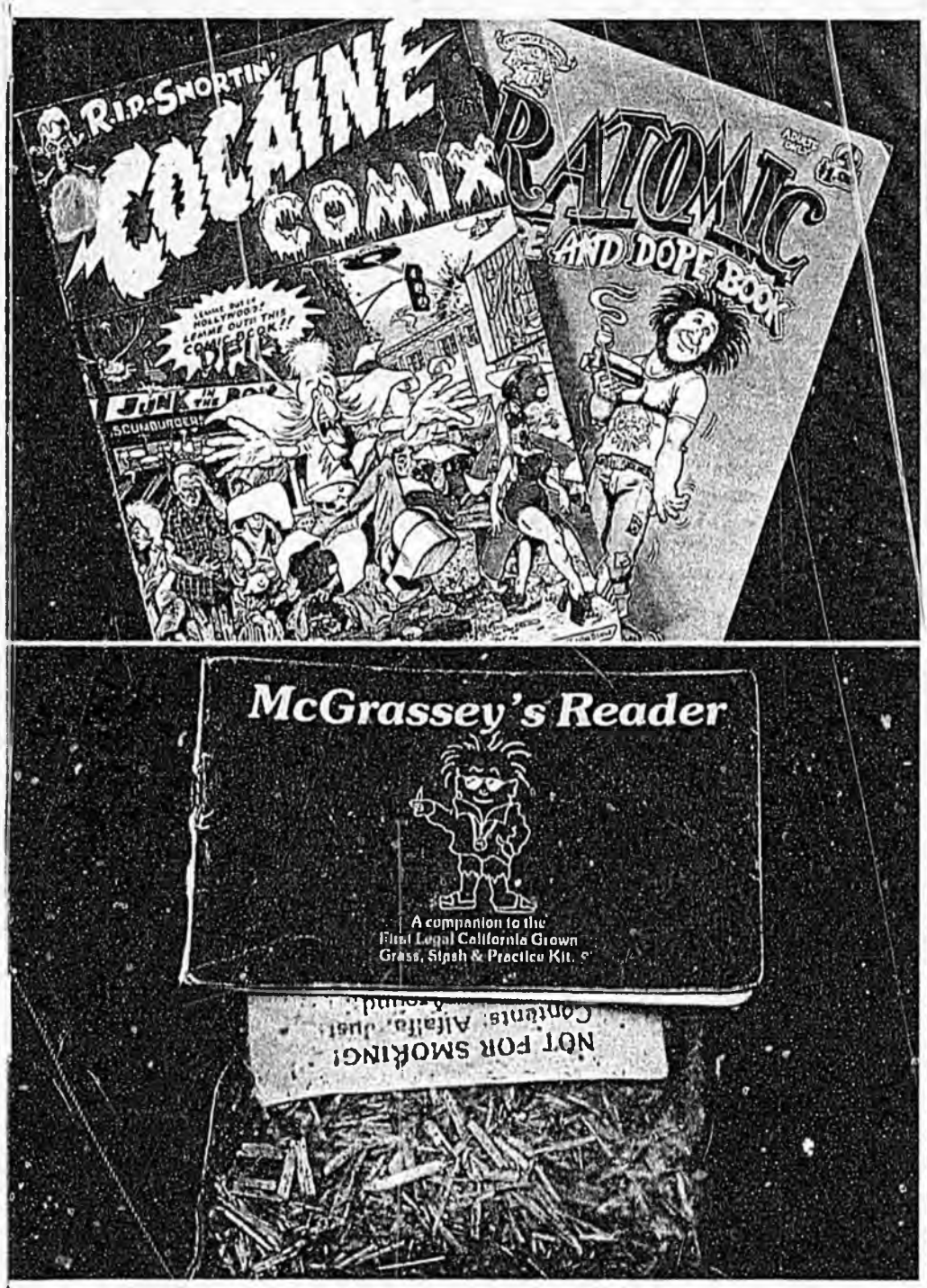
Result: Forty-four percent of the pregnancies of the THC-treated mothers did not result in living offspring. The losses occurred as abortions, reabsorptions, *in utero* death, stillbirth or death just after birth. The control mothers had a 12 percent birth loss—which is normal for a monkey colony.

Of even greater concern were the results obtained when the pathologist did microscopic evaluations of tissues and organs from the dead fetuses and infants. This was a double blind study. He did not know whether tissues came from the THC-exposed offspring or the offspring of undrugged mothers. Result: Although the dead THC-exposed offspring appeared to be normal, in each case he found subtle developmental abnormalities in various organ systems and tissues which were not found in the offspring of the undrugged mothers.

"Furthermore," said Dr. Sassenrath, "the THC-exposed babies that survived acted differently than the others. They over-responded. They didn't seem to have normal 'brakes' on such behavior as active playing without stopping or clasping cagemates who struggled to get away. They all showed deficits in attention and over-concentration on different stimuli in the environment. They had the type of deficits in behavior which indicate that the central nervous system has been affected. This kind of subtle behavioral difference can be characteristic of marginal brain damage in early development."

It has been well established that THC easily passes through the placenta. But how does it affect the placenta itself? In March 1979, Dr. Paige Besch of Baylor College of Medicine in Houston, Texas, completed a four-year study on the subject. He found that the more THC was added to the human placenta, the less estrogen was produced. Says Dr. Besch: "Decreased estrogen results in decreased blood flow to the placenta, which means decreased nutrition to the developing baby."

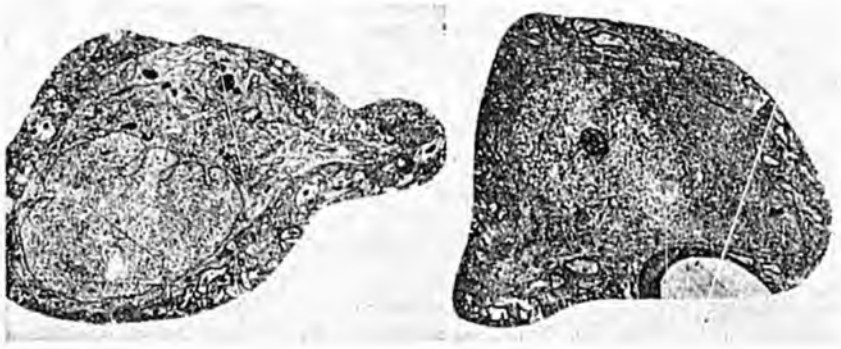
Other scientists working with rhesus monkeys and with human females have found that THC appears to interfere with the hormonal system and with the menstrual cycle. For example, Dr. Joan Bauman and Dr. Robert Kolodny found that 38.8 percent of pot smokers they studied had defective



A profitable branch of the drug publications industry is aimed at children. Comic books show how to "smoke dope," how to cut and snort cocaine. McGrassey's Reader, *an easy-to-read primer, explains how to roll a joint and comes with "practice grass" (alfalfa), rolling papers and a "roach clip."*

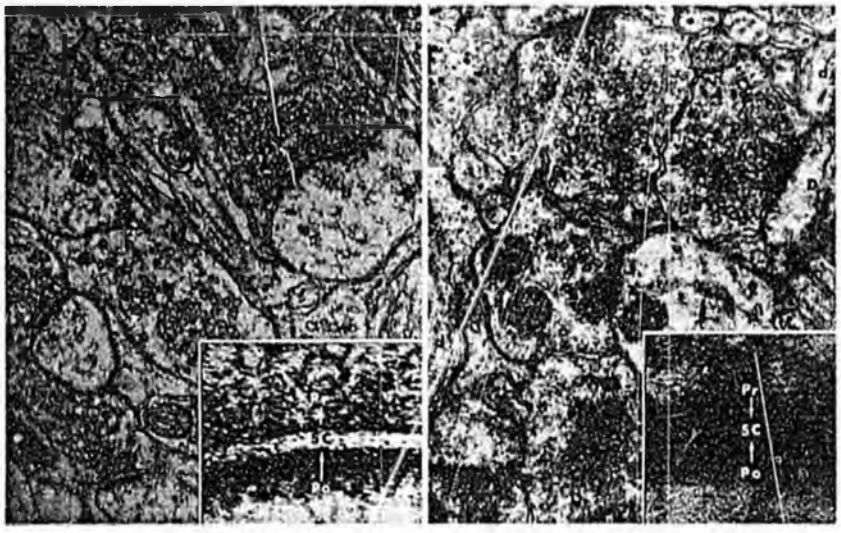
Marijuana and Brain Damage

To determine the effects of marijuana on the brain, Dr. Robert Heath of Tulane University gave rhesus monkeys 2 to 3 "monkey-sized" joints per day (inducing blood levels equal to those of human subjects smoking 3 joints per day) for six months. A control group was given an equal number of marijuana cigarettes with the active ingredient THC removed. Heath reported significant damage.



Normal Brain Cell *Damaged Brain Cell*

While no changes were noted in cells taken from the "control" group, cells from the THC-exposed brains show a marked increase in the number of inclusion bodies that appear in the nuclei, and the rough endoplasmic reticulum is disrupted. These changes in the cell structure may be interpreted as a sign of injury in most cells, including brain cells. These injured cells have a reduced capacity for normal function.



Normal Synapse *Damaged Synapse*

Vital to survival, the synaptic membrane serves as the body's communications network, transmitting messages to the brain. While a normal synapse (left) allows for free flow of messages, the THC-exposed synapse (with widening of the synaptic cleft, electron opaque materials in the cleft and some clumping in the synaptic vesicle) will not properly transmit these necessary messages.

In the light of recent experiments, little doubt can remain as to the gradual, yet significant, consequences of smoking marijuana. Perception, motor activity, sensation, emotional response, motivation, memory and states of awareness can all be affected.

menstrual cycles, compared to 12 percent of the non-pot smokers. Sex hormones were also affected.

Dr. Bauman pointed out: "Researchers are forbidden by FDA regulations to administer marijuana to teen-agers in the course of controlled experiments. But we are particularly worried about what the drug may be doing to pre-teen and teen-aged girls. Any of the effects we found could be even stronger before the body's endocrine-regulated systems have matured."

It should also be remembered that in our country, for the first time in the history of any country, pre-teen and teen-aged girls are smoking cannabis on a mass scale. Our pot-smoking teen-aged girls, therefore, are unwittingly turning themselves into guinea pigs.

Many animal experiments have shown that the mother's THC exposure affects the "next generation," to whom no additional THC has been given. One particularly strange result was found by Dr. Susan Dalterio of the University of Texas Medical School at San Antonio. She gave nursing mice mothers a tiny drop of sesame oil containing THC—the human equivalent of two joints a day. Aside from one equally small dose the day before they gave birth, none of the mother mice had ever before received any THC. The offspring were fed no THC at all. Yet when the males reached young adulthood, they all became very fat and half were "grossly overweight": 50 grams. (The normal male mice of their breed weigh 10 grams.) These fat fellows were also sexually inept, "showing," said Dr. Dalterio primly, "deficient copulatory behavior." When autopsies were performed, there were globs of fat throughout the bodies of all the male mice—whose only exposure to the drug had been as infants, through their mothers' milk.

Other researchers working with mice, rats, dogs, rabbits and rhesus monkeys have shown that the mother's exposure to THC—or to other cannabinoids—causes smaller-than-normal litters and smaller-than-normal babies.

Research on animals has proven that marijuana is not teratogenic

[producing deformed babies]. It is, however, embryocidal [having a fetus-killing effect].

Marijuana and the Brain

Pot is smoked to get a "high"—to "alter" the mind. But no smoker wants his brain cells affected, structurally changed. Yet this may be what is happening.

Dr. Robert Heath, chairman of the department of neurology and psychiatry of Tulane University, has pioneered in the study of the limbic area of the brain, working with humans and with rhesus monkeys. This particular brain area is very similar in both species. This so-called "old mammalian brain" is the site of such specifics as time sense, sexual activity, appetite and emotions—both pleasurable and painful.

In July 1978, Heath showed some startling slides to more than 100 marijuana researchers at the Reims Conference. These were magnified pictures of brain cells from rhesus monkeys that had been exposed to the smoke of two to three "monkey-sized" joints a day (one-fourth the size of an average human joint) at 3 percent THC for six months. The monkeys had received *no* THC for the following six months (equivalent to a much longer time in human terms). Then they were sacrificed and the pictures taken.

Dr. Heath, a distinguished-looking, white-haired man, stood by the large screen. Using a pointer, he illustrated what were, perhaps, the most sobering slides shown during the entire two-day conference. He identified the following structural brain cell changes which were glaringly evident when the cells of the THC-exposed monkeys were compared to the cells taken from the same brain area of the control monkeys.

"Here," said Dr. Heath, "we see an accumulation of granular material in—and a definite widening of—the synaptic cleft between nerve cells [where the flow of messages jumps from one cell to the next]. This," he said, "causes a slowing down in the movement of the messages and may impair some brain processes."

The pointer moved on to another spot. "Here we see a clumping of the synaptic vesicles [small sacs in the endings of nerve cells, containing the essential nerve transmitters: chemical activators of the brain]. We find the identical conditions in cases of early brain damage in humans.

"And here," said Dr. Heath, "note the significant increase in inclusion bodies. These foreign substances are seen in degenerating brain cells of very old animals and humans, but not to the degree that we see them here in very young pot-exposed rhesus monkeys."

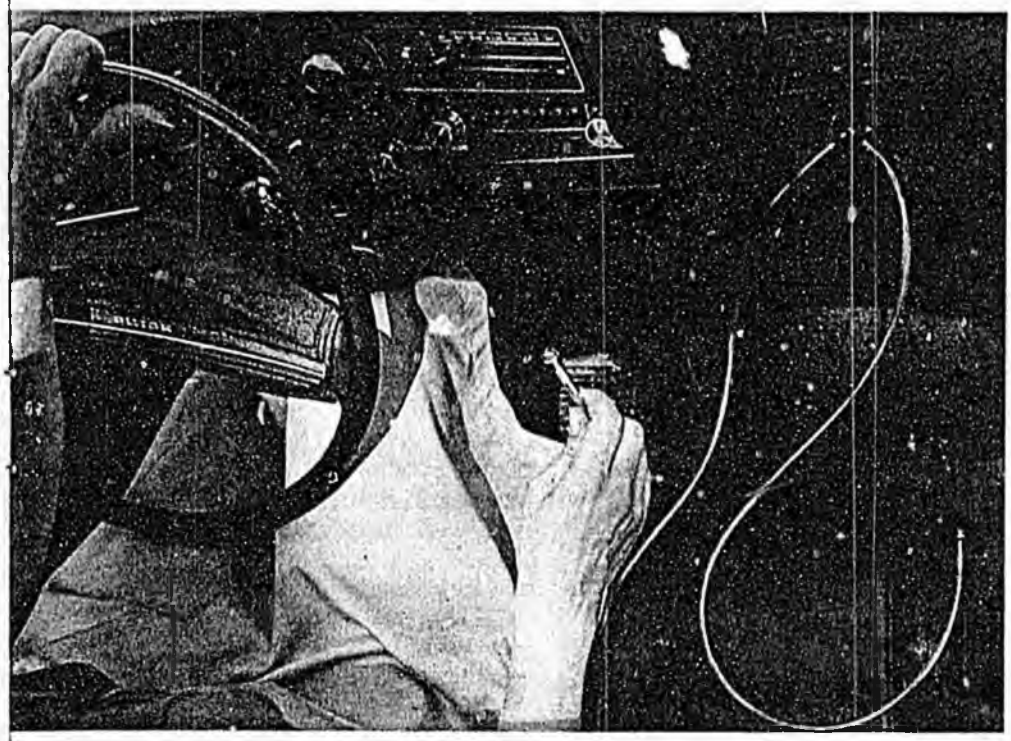
Dr. Heath summed up: "Since the monkeys had received no pot smoke for six months prior to being sacrificed, it is clear that, at least in the limbic area, structural brain changes caused by marijuana are not readily reversible."

Dr. Robert Gilkeson of Cleveland, Ohio, is completing a study of pot-smoking teen-agers which concentrates on EEG readings of the highly developed, cognitive cerebral cortex, or "new brain." Gilkeson specializes in neurophysiologic research and electroencephalography in learning disabilities. In addition to the standard hour-long EEGs, he developed another half-hour of techniques to pinpoint learning disabilities. In a unique on-going study, he has applied this technique to more than 50 youngsters, ages 13 to 18. All come from the affluent suburbs of Cleveland. All said they did not "do" other drugs. All had met the "criteria" of being high on pot at least two or three times a week for the four months preceding the EEG. But all were forbidden to smoke pot for at least 24 hours prior to the test.

Results: *All* EEGs were "markedly immature for age." They also had an abnormal amount of slow theta rhythms, "sufficient," said Gilkeson, "to be diagnostic of diffuse brain impairment. In the EEG section of academic tasks, none of these youngsters could speed up when challenged. Their brain waves failed to respond to these stimuli in the usual way, according to the standardized norms."

Reading the encephalographer's report shocked many youngsters into "getting off the pot." Those who stayed off for three months had normal EEGs when they took the test again. "Of even greater significance," said Gilkeson, "are those who progressed from abnormal to normal with abstinence—and a return to abnormal again when the youngster returned to chronic pot use."

Gilkeson's findings are con-



Dashboard pot pipes enable the smoker to "drive high." More than 50 research studies show that one or two joints seriously impair driving performance, even after the high has gone. Despite this, surveys reveal "60 to 80 percent of users say they sometimes drive while "intoxicated on marijuana."

firmed by a number of other scientists. Dr. Turin Itel, one of the foremost investigators of the effects of drugs on human EEGs, sums up: "Acute or chronic use of marijuana produces an EEG shift toward slow. This is definitely associated with impairment of cognitive functions."

Marijuana and the Lungs

Since pot smoke enters the body through the lungs, it obviously reaches its highest concentration in these organs. A 1975 study compared the compounds in a "weak" marijuana cigarette (.8 percent THC) with a high-tar standard tobacco cigarette. Aside from the fact that tobacco smoke contains nicotine and pot smoke contains cannabinoids, the two types of "smokes" have roughly the same compounds, including lung irritants and carcinogens (cancer-producing agents), co-carcinogens and carcinogen activators. Furthermore, a number of these are present in pot smoke in amounts 50 to 100 percent greater than in tobacco smoke—for example, the carcinogens benzanthracene and benzopyrene, with the latter also being a strong cancer initiator.

In addition to the carcinogens, there are elements in both types of cigarettes which irritate and inflame the lungs. Here, too, marijuana smoke comes out with an even "darker" picture than tobacco smoke. And, whereas tobacco smokers avail themselves of filters, low-tar cigarettes, etc., pot smokers consider "good pot" to be the strongest they can get. In addition, an entire "line" of the drug paraphernalia industry—the "power hitter"—blasts the smoke deep into the lungs. Some power hitters are produced in such kiddie-appealing shapes as red plastic space guns and miniature footballs. Many pot smokers use "bongs" in the belief that drawing the smoke through water or ice lessens the harshness of the smoke by cooling it down. The bong, however, concentrates all the smoke inside a chamber so that none is diffused into the air. As one manufacturer advertises: "The only thing wasted is you."

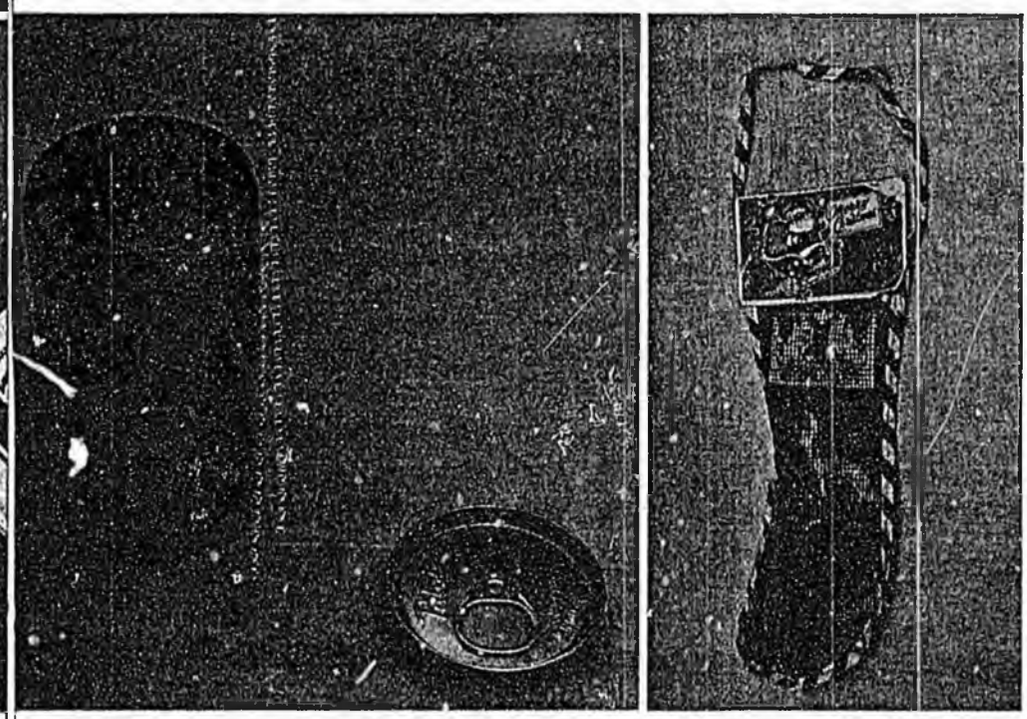
Pot advocates claim that comparisons between marijuana and tobacco do not hold up, since the tobacco smoker generally puffs on a pack a day or more, whereas the chronic pot smoker may use only one or two joints a day, or less. The noted researcher Dr. Sidney Cohen, who has done one of the three major human studies with marijuana, points out: "There are two factors which equalize the risks involved. First: People—especially young people—are, in fact, smoking more joints per day than ever before [this despite the ever-increasing potency of marijuana available on the streets today]. And it is the younger age groups who seem to be smoking the most.

"Second: Typical tobacco cigarette smokers either do not inhale the smoke into the bronchial passages or, if they do, it is for short periods of time. In contrast, the usual method of smoking marijuana is to inhale the material as deeply as possible, keep it in the lower airways for as long as possible and exhale only when another breath must be taken. At times the inhalation is so complete that no smoke is detectable in the exhaled air.

"This means that not only are the irritants and carcinogens in contact with the actual lung tissue for a longer time, but more of the toxic elements may be absorbed into the bloodstream than is the case with cigarettes. These elements are then delivered to other tissues. New studies show that heavy tobacco smokers are more prone than nonsmokers to cancer of the bladder, the esophagus and other nonpulmonary organs. Presumably, therefore, the carcinogens in both tobacco and marijuana smoke do 'carry.' "

Pot advocates like to point out that "there are no dead bodies from marijuana." With the notable exception of highway accidents caused by stoned drivers, this is true. "However," says Dr. Cohen, "we should not forget that it takes 20 to 30 years of consistent heavy use of tobacco to produce a lung cancer. We have been smoking marijuana heavily in the U.S. for a decade or less. Also, with all our medical sophistication, it was not until the 1950s that we noted any relationship between cigarette smoking and lung cancer.

"In those countries where cannabis has been smoked by adult males for centuries, there have been no long-term longitudinal studies regarding cancer and can-



Stash cans for pot come in many guises—and disguises. A popular item: Christmas stockings with candy-flavored rolling papers and pot pipes. Drug paraphernalia has been banned in ten states so far, and the Drug Enforcement Administration's new "model" anti-paraphernalia law is available to all states.

nabis. Studies have been done, however, which show a high incidence of bronchitis, pharyngitis, etc., among cannabis smokers, especially those who used the stronger varieties."

(In this context, it is interesting to note that in the oft-quoted "Ganja in Jamaica" study of 30 cane workers, lung cells were not analyzed. Furthermore, only healthy people were accepted for the study, thereby excluding those with chronic lung disease. In the words of Dr. John Hall, chairman of the department of medicine in Kingston, "Omitted were all cannabis smokers who showed pathological symptoms such as we see in our clinic." Among other "pathological symptoms" evidenced by long-term "ganja" smokers, Dr. Hall listed emphysema, an irreversible lung disease.)

The 1979 surgeon general's report on tobacco cigarette smoking contained some 30,000 research papers all bearing out the slogan: "The surgeon general warns that cigarette smoking is dangerous to your health." And, based on past statistics, the surgeon general said that "this year alone, cigarettes will kill 346,000 Americans."

Research on marijuana and the lungs is in its infancy compared to that on tobacco and the lungs. But, thus far, the findings are hardly reassuring. For example: Dr. Donald Tashkin, a specialist in pulmonary medicine at UCLA, found a 25 percent increased airflow resistance among pot smokers compared to non-pot smokers. (Airflow determines how well we can get oxygen into our bodies and how well we can get carbon dioxide out.) This was an abnormality which did *not* occur in heavy tobacco smokers.

In studies published in February 1980, Dr. Gary Huber, director of the Smoking and Health Research Program of Harvard University, showed that marijuana activates—by some 200 percent—enzymes which contribute to the "eating" or digesting of the lung itself.

In animal studies where marijuana and tobacco smoke condensates are painted on mouse skin, both produce cancers.

A further gloomy point is that many pot smokers also smoke tobacco cigarettes, and the harmful effects may be additive. Dr. Cohen sums up: "There is real reason for concern that marijuana alone, or marijuana smoked with tobacco, will bring forth a new wave of lung cancer in another 10 to 20 years."

Many people who once believed marijuana to be harmless have now concluded that it may be the most dangerous drug in America today, for many reasons. One such person is Dr. Robert DuPont, chairman of the Drug Dependence Section of the World Psychiatric Association and former federal director of the National Institute on Drug Abuse.

Dr. DuPont says: "I believe it to be our most dangerous drug because of widespread frequent use, especially by our youth, and because the psychological as well as the physical effects are insidious and ultimately devastating. Furthermore, for millions of our youth, marijuana is the gateway to the use of many other illegal drugs, including angel dust, LSD and heroin.

"One of the most disturbing aspects of marijuana use is that the user's judgment about the effects of the drug is clouded by his or her own use of marijuana. If an enemy nation were to plan to undermine America's future, they could not think of a more effective strategy than poisoning our youth. Marijuana is such a poison. The tragedy is more painful because the poison is not being administered by an enemy, but by ourselves. Not only the marijuana-using youth, but all of us as well, must share the responsibility for this tragedy, and we must all participate in combating and overcoming this marijuana plague.

"The one hopeful sign on the horizon is the mobilization of concerned parents. They are distraught—sometimes terrified—by the effects of marijuana on their children. And they are angry at the "professionals" who make them feel that *they* are the problem, rather than the drug. These parents throughout the country are discovering one another and are forming action groups which are beginning to have a positive impact on their own children as well as on our local and national leadership. But parents can't do the job alone. Government, business, educators, media—all segments of our society—must join in a massive endeavor to stop our kids from going to pot."

What Parents Can Do

Three national organizations have spearheaded the movement for "combating" the marijuana plague. The pioneer group in this effort is the American Council on Marijuana, founded in 1977 by the Myrin Institute. On its board were the leading scientists in the field at that time. They developed the first accurate resource materials: scientific information on marijuana for the lay public. Their publication, *Marijuana Today*, by Dr. George Russell, was the first such compilation of medical findings and is now in its fourth updated edition, having sold more than 100,000 copies.

In addition, ACM has held three major conferences at New York University Medical Center and at Columbia University. The second of these, which focused on "Marijuana: Biological Effects and Social Implications," a two-day conference, was the largest gathering of scientists, drug-abuse specialists and educators ever to be held in this country. It was also the first lecture series on marijuana to be accredited by the AMA.

The second organization, also founded in 1977, was PRIDE—Parent Resources and Information on Drug Education—which now has active parent groups in more than 19 states. PRIDE has two main functions: One is to disseminate reliable medical information on the health hazards of marijuana (a "PRIDE Packet" is available to individuals and organizations); the second is to stimulate the organization of new parent groups, using a concept originated by PRIDE—that of developing parent peer pressure groups comprised of the parents of the children's friends (not the parents' friends—these parents may not even know one another) in order to combat teen peer pressure and the "do drug" messages of the "kiddie-youth drug culture." In addition, PRIDE sponsors drug education and prevention conferences for schools, educators and parents to encour-

age them to work together to establish ongoing programs.

The third national organization, Citizens for Informed Choices on Marijuana (CICOM), whose staff helped plan Wellington's "Grass Roots Conference on Grass," has organized similar conferences from Connecticut to Washington.

Lee Dogoloff, White House drug policy advisor, supports the efforts of these groups, saying:

"I truly believe that our brightest hope for the future of hundreds of thousands of young people in the U.S. today is the burgeoning movement of parent/citizen groups now organizing in virtually every state of the nation. There are at this time thousands of adults all working toward the same goal—to see that our children grow up drug-free." ★

Marijuana Reprints

Extra copies of the two marijuana articles which have appeared in *The SatEvePost* may be ordered by enclosing a check or money order as follows:

1 to 9	$1.50 each set of two articles
10 to 99	85¢ each set
100 to 999	65¢ each set
1000 to 1500	40¢ each set

For special bulk purchases, call Susan Hanley at 317-636-8881 for price quotes (any more than 1500).

For reprints, write to: MERF, Dept. M-Reprint, P.O. Box 2166, Indianapolis, IN 46206.

Make your check or money order payable to: MEDICAL EDUCATION AND RESEARCH FOUNDATION.

Check or money order *must* accompany order. Remit in US funds *only*.
Postage is included in the above prices. Special shipping will require additional charges.

Additional References:

American Council on Marijuana (ACM), 6193 Executive Boulevard, Rockville, MD 20852. *Marijuana Today*, by George Russell, Ph.D. Medical findings for the layman. $3.00. *Keep Off the Grass*, by Gabriel Nahas, M.D., Ph.D. The marijuana story from 1969 to 1980. $9.50. *Twelve Is Too Old*, by Peggy Mann. The first novel on the pot scene for teens and pre-teens. $7.95.

Citizens for Informed Choices on Marijuana (CICOM), 300 Broad St., Stamford, CT 06901. A one-year membership, including series of four booklets, "How to Help Your Child Resist the Marijuana Culture," plus bimonthly newsletter. $10.00.

Committees of Correspondence, P.O. Box 1590, Cathedral Station, New York, NY 10025. Information on one important drug abuse issue each month, plus suggestions on how correspondents can most effectively communicate their concerns on each issue and thus influence the outcome. $5.00 per year.

Essex County Grand Jury Presentment, Prosecutors' Office, New Courts Building, Newark, NJ 07102. Startling 60-page report on drug abuse in schools, plus Grand Jury's 31 practical mandates (to schools, courts, PTAs, etc.) which can be adopted or adapted by any community. $5.00.

Families in Action, 1436 Cornell Rd. NE, Atlanta, GA 30306. 164-page manual on how to organize your community to combat the "kiddie drug culture," including drug paraphernalia. $10.00. Plus quarterly newsletter which includes latest information on the drug scene at state, national and international levels. $3.00.

Drug Enforcement Administration: Preventive Programs, Washington, D.C. 20537. (Or GPO, Washington, D.C. 20402.) Excellent 44-page magazine with articles and pictures on health hazards and articles on drug paraphernalia. Single copies free.

Mini-Courses, 4290 Raintree Lane NW, Atlanta, GA 30327. Six-unit teaching manual, "Drug Abuse and the Growing Child," for third through eighth grades (for schools, homes and agencies). $10.00. Cassette with narration, plus 80 color slides showing youth drug subculture, plus prevention methods. $46.75.

National Drug Abuse Foundation, 6500 Randall Place, Falls Church, VA 22044. Information on commonly abused drugs, plus recommended resources and reading. $2.00.

National Institute on Drug Abuse, P.O. Box 2105, Rockville, MD 20852. *Parents, Peers and Pot*. Experiences of parents who successfully dealt with the pot problem. *For Parents Only: What You Need to Know About Marijuana*. (Single copies of both books free.) *For Parents Only: What Kids Think About Marijuana*, a 30-minute 16mm film available on free loan to parent groups and adult community organizations (specify needed date). Modern Talking Picture Service, 5000 Park St. North, St. Petersburg, FL 33709.

Narcotics Education, Inc., 6830 Laurel St. NW, Washington, D.C. 20012. Six Q & A booklets on marijuana and P.C.P. $2.00. *Listen* (magazine for teens) issue on marijuana. $1.00.

Phoenix House, 164 West 74th St., New York, NY 10023. Free information on drugs, plus advice on school programs.

Prevention Materials Institute, P.O. Box 152, Lafayette, CA 94549. *Communicating About Drugs*, for parents and teachers. $1.75.

PRIDE (Parent Resources and Information on Drug Education, University Plaza, Georgia State University, Atlanta, GA 30303. Information on drugs, including action plan for parents and their school/community. $10.00. Quarterly newsletter. $4.00.

STOP (Society to Oppose Pot), P.O. Box 6772, Silver Spring, MD 20906. Booklet and briefing by lawyers on how to muster local political pressure to influence elected officials in reference to antidrug legislation. $3.00.

Executive Information Resources, Box 611, Wellington, Kansas 67152. Unedited cassette tapes of the general sessions of the "Grass Roots Conference on Grass" held in Washington. Tapes are priced at $6.40 each or $35.00 for a complete set of seven tapes. Prices include shipping.

These organizations cannot process C.O.D. orders.

Drug Abuse Issue of the Month

COMMITTEES OF CORRESPONDENCE — Write Makes Might

Vol. 1 No. 1 May 1980

Why Decriminalization of Marijuana Must Be Opposed At Once

The issue of decriminalization of marijuana is currently under consideration by the House and the Senate and could be voted on very soon.

Experts who are fighting "the drug battle" feel that the battle would be irrevocably **lost** if decriminalization becomes Federal law -- since Federal law historically serves as a model for State law.

Dr. Robert DuPont, former Director of the Federal Agency, the National Institute on Drug Abuse -- who used to favor "decrim" -- is just one of a number of leading experts who have completely changed their minds about this issue. Dr. DuPont now says: "I have learned that it is impossible to be pro-decrim and anti-pot, **because no matter how you try to explain it to them, young people interpret decrim as meaning that pot must be okay because the government has legally sanctioned it.**"

Decriminalization is not synonymous with legalization. However, in the 12 states which have already decriminalized simple possession of marijuana (without intent to sell), it is "read" as legalization of marijuana -- which gives further impetus to the idea that decriminalization and legalization are one and the same.

The Federal Law now being proposed in the Senate, and soon to be taken up in the House of Representatives, would decriminalize simple possession of 30 grams of marijuana for personal use. How much **is** 30 grams of pot? A little over an ounce -- and enough to make 30 to 60 joints, depending on how it is rolled.

At first glance the idea of "decrim" may sound sensible to some. However, a look below the surface clearly shows that there are many important reasons to oppose decrim, and virtually no valid reasons to support it.

Pro-pot forces have muddled the issues by their constant repetition of the statistic: 450,000 marijuana arrests were made last year. They follow this up by saying that "the trauma of an arrest and a child being thrown into jail is far more harmful than the drug itself." Some of the pro-pot forces go further, claiming this is "the only really harmful thing about the drug."

The Facts Are These

1. So far as "being thrown into jail" is concerned:

> The President of the International Association of the Chiefs of Police, Chief Edward Davis, testified at the House of Representatives sub-Committee hearings on decriminalization, and summed it up like this:
>
> "Let me say in closing, that this foolish statement that we are putting our children in prison is pure poppycock. I don't think there has been one child **or** adult put in prison for simple possession of marijuana in the last five years."
>
> -House Select Committee on Narcotics Abuse and Control hearings, March 1977

This statement is, in effect, "proved out" by NORML and by other pro-pot organizations. They obviously pick the best case they can find to make their point. The Jerry Mitchell case is their "prize"; used as a powerful fund-raising platform for NORML.

Note first that the Jerry Mitchell case does not even **concern** "simple possession" (without intent to sell). Mitchell was arrested for **selling** marijuana. And NORML officially claims to be concerned only about possession, not sale. However, if this important point is overlooked, the case -- as reported by NORML -- does appear to be a miscarriage of justice where the punishment does not fit the crime. Mitchell was, says NORML, arrested in 1975 and given seven years (of which he served 15 months) for selling $5.00 worth of pot (to an undercover agent of the Missouri State Highway Patrol Narcotics Division).

What NORML does **not** mention -- though the facts are well known to them -- is the following: DURING THE PRE-SENTENCING INVESTIGATION, **MITCHELL HAD PLED GUILTY TO SELLING:**

- One pound of marijuana (the equivalent of some 500 to 900 joints, or marijuana cigarettes) which he sold for $125.00;
- one hundred tablets of what he thought was amphetamines, which he sold for $25.00.
- He also offered to sell the agent an ounce of cocaine for $800.00

Continued on page 2

The Facts (continued from page 1)

• Furthermore, he had been under prior probation -- under the same judge -- for possession of marijuana. Mitchell had just finished the probation period. This means that since the judge knew it to be a second offense, when sentencing he took into account the other drug involvements to which Mitchell had admitted.

Obviously, if they had a solid "possession" case, NORML would use it.

So much for "being thrown into jail" for simple possession of an ounce or less of marijuana.

2. So far as marijuana possession **arrests** are concerned:

• Law enforcement officials throughout the nation point out that for the past 5 or 6 years or more, most of those charged with "simple possession" of an ounce or less of marijuana, have really been arrested for some other violation of the law. Then, because marijuana was found on them, they were also charged with possession of marijuana.

• Furthermore, law enforcement agencies in some states no longer enforce any marijuana laws -- including arrest. (For example, according to **Time** magazine, March 13, 1978: "Federal prosecutors in Miami are so swamped they rarely bother with pot cases of less than one ton.") If the courts aren't going to do anything, why should the police bother to make arrests?

• Drug Enforcement Administrator, Peter Bensinger, wrote in **International Drug Report**, "Judges are not dealing with users, or small time user-dealers, but with organizations dealing in tonnage quantities of marijuana."

• A police chief in Maine wrote: "Since the decriminalization of marijuana in Maine, I have noticed a substantial increase in marijuana cases. Also, the chemists who analyze police-confiscated samples say they are finding more marijuana sprayed with PCP. This enables the dealer to charge more for what the customer is told is a better grade marijuana. Apparently, there is now so little risk that the dealer is willing to take more chances. He has an attitude of: "It will only cost some money if I get caught."

The fact is: In the states which already have decriminalization, marijuana use has increased. In the other states, we have far too much "de facto decriminalization" as it is. We certainly don't need the Federal Government offering the states a "pilot project" for more!

A Few Q's and Their A's

Q: Why have a law that isn't obeyed?

• As a noted Washington, D.C. attorney put it: "As any prosecuter knows, there are thousands of laws on the books that are enforced only sparingly; prosecutorial discretion is built into our criminal justice system."

• Another Washington attorney says: "The marijuana possession law, as it stands, states our national attitude and policy toward marijuana: we, as a nation, do not sanction its use."

• As a highway patrol officer put it: "The 55-mile-an-hour speed limit is a heavily violated law. But in the first four years after the law was enacted, highway deaths were reduced by 36,000. The fact that the law is heavily violated does not mean it should be eliminated."

Q: Why take police time worrying about marijuana possession when they could better be doing something else?

• As pointed out, the police generally do not worry about simple possession. Furthermore, marijuana use has increased in states which have decriminalized, and traffic accidents and other drug-related crimes have increased, requiring more police time than before "decrim". In California, for example, in the first six months following decriminalization of marijuana in 1976, arrests for driving under the influence of drugs increased 46.2% in the case of adults, and 71.4% in the case of juveniles!

• During prohibition of alcohol the statement was made that it should be legalized so that the officers didn't have to waste their time enforcing those laws. Today, according to the National Council on Alcoholism, at least 50% of police time is spent on some alcohol-related problem.

It is obvious, therefore, why police throughout the country are generally vehemently opposed to decrim, which -- they say -- would, in the short and long run, make their jobs much more difficult.

Q: I have heard that in the 12 states which have, thus far, decriminalized marijuana, pot usage did not increase.

• This is not true. For example, NORML publicizes the figure that in Oregon, the second state to decriminalize marijuana, "current pot use" increased only 1%. However, what they neglect to mention is that this figure was arrived at by computing pot usage of everyone in Oregon, ages 18 to 100! Since usage is generally negligible in the over-35 age group, the age span of the computation evened out the increase in usage figures. However, the same study showed that **in the 18 to 29 age group, usage increased 16% after decrim.** And the study did not even consider usage under 18.

A police chief in Oregon reported: "Local use of marijuana has expanded greatly in the five years since adoption of the decriminalization law in this state -- **particularly in the lower high school and upper grammar school.**"

Here Are Three Bottom Line Reasons For Opposing Decriminalization

1. The fact that marijuana is understood by young people and their parents as being illegal, is, in many cases, an important deterrant to marijuana use.

2. **Youngsters "read" decrim as a green light to smoke pot.** Jeff Hamilton, son of Joe and stepson of Carol Burnett Hamilton, put it this way when testifying before the Senate Sub-Committee Hearings on Health Hazards of Marijuana: "The worst thing about decrim is the unmistakable message of 'okayness' it gives to kids. Not only that it's okay to smoke grass, but also that pot must be harmless, since the government would obviously not decriminalize a harmful drug. I have searched, and honestly can find no sound reason to feel that decriminalization would have any other effect than a negative and slow deterioration of the minds of the people of this nation."

3. **Decriminalization would be a step toward legalization.** It is important to realize that, for 10 years, NORML officially claimed they were only for decrim and not for legalization. **Then,** having achieved a climate of acceptance for "decrim", they officially adopted the policy of legalization of marijuana.

In their January 1979 "Official Policy" adopted by the Board of Directors, Executive Committee, Advisory Board and Regional and State Co-ordinators, NORML first redefined its concept of decriminalization. This included: "The removal of all criminal **and civil** penalties for the private possession of marijuana for personal use." (Emphasis added -- civil penalties include such regulatory measures as tickets and fines for traffic violations.)

Other clauses from the NORML policy statement: "The right of possession should include other acts incidental to such possession, **including cultivation, and transportation** for personal use, and the casual, non-profit transfers of small amounts of marijuana." "... It must be recognized that where personal use and possession of marijuana are no longer serious crimes. It is both inconsistent and irrational to **provide lengthy prison terms for those who distribute marijuana for profit.**" (Emphasis added.)

The statement concludes: **"Specifically, NORML supports the eventual legalization of marijuana."**

At NORML's annual convention where this policy was presented and adopted, then-Executive Director Keith Stroup said to the Conference: "We finally took the honest step to declare to the world we want legal marijuana." (As quoted in **The Atlanta Journal**, Dec. 29, 1978.)

At a seminar for lawyers sponsored by NORML on December 16, 1978, Keith Stroup was asked why the Seminar dealt not only with marijuana, but with cocaine and other drugs. Stroup answered: "NORML will always focus on marijuana, but I'd hate like hell to think decriminalization (of marijuana) would stop there." (As quoted in **The Atlanta Journal and Constitution**, Dec. 3, 1978.

In a debate on decriminalization with Sue Rusche at Emory University in February, 1979, Stroup told the students: "The next thing NORML's going to work on is decriminalizing drug dealers and drug smugglers because, after all, they're not criminals either."

Remember

Because of the well-orchestrated and well-financed pro-pot letter writing campaigns, elected representatives have become convinced over the past decade that the public wants decriminalization of marijuana. (Stroup has testified before Congress that NORML speaks for 15,000,000 marijuana users in this country.) A White House aide said at a meeting of Federation of Parents for Drug-Free Youth: "You must realize that the loudest voices -- indeed, almost the only voices -- we hear from are pro-potters." We must let our voices be heard. It is **essential** that you take ten minutes to write to your Congressman, to both your Senators, and to President Carter. (In case you do not know the name of your elected representatives, call your local library, or Board of Elections, or newspaper.)

You can phone the White House 202-456-1414 and ask for the Comments Office. Give your views on decriminalization. A report of all calls is given to the President every week.

Here are some sample letters and telegrams. **But we urge you to write your own for greater effectiveness.**

Be sure to ask your elected representatives to advise you of their position on decriminalization of marijuana. Only by asking a question of this sort can you be sure that your letter will actually be shown to him (or her). Otherwise, your letter may be answered by an aide. Please send a copy of your letter to Box 6272 Silver Spring, MD 20906, so our representatives in Washington will have a record of the number of Committees of Correspondence people responding.

Sample Letters

Dear Senator:

Please vote against any relaxation of marijuana laws. Decriminalization is not the answer to this country's marijuana pandemic. Would you please join Senator Mathias of Maryland as a co-sponsor of his amendment to remove Section 1813 of Senate Bill 1722, and return to current law. Please advise me of your position on this issue.

Dear Congressman:

Please vote against decriminalization of marijuana. Current medical and scientific evidence has proven marijuana to be a much more dangerous drug than many once believe it to be. Decriminalization will only make marijuana more available to our youth, and the epidemic will increase to even more dangerous levels. Please advise me as to your position on this issue.

Dear President Carter:

I am strongly opposed to relaxation of the marijuana possession penalties. Decriminalization is certainly not the answer to this country's massive marijuana epidemic. Indeed, as shown by the states which have decriminalized, it only makes the problem worse. Please advise me as to your present position on this issue.

Continued on page 4