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which persuade individuals to use any kind of drugs. Rational social policy should seek to minimize such social pressures, whether they come from peers, from the media, from social custom, or from the user's sense of inadequacy. Official approval would inevitably encourage some people to use the drug who would not otherwise do so, and would also increase the incidence of heavy or otherwise irresponsible use and its complications. On this basis we reject policy option number one, approval of use.

ELIMINATION OF USE

For a half-century, official social policy has been not only to discourage use but to eliminate it (option number two). With the principal responsibility for this policy assigned to law enforcement, its implementation reached its zenith in the late 1950's and early 1960's when marihuana-related offenses were punishable by long periods of incarceration. This policy grew out of a distorted and greatly exaggerated concept of the drug's ordinary effects upon the individual and the society. On the basis of information then available, marihuana was not adequately distinguished from other problem drugs and was assumed to be as harmful as the others.

The increased incidence of use, intensive scientific reevaluation, and the spread of use to the middle and upper socioeconomic groups have brought about the informal adoption of a modified social policy. On the basis of our opinion surveys and our empirical studies of law enforcement behavior, we are convinced that officialdom and the public are no longer as punitive toward marihuana use as they once were.

Now there exists a more realistic estimate of the actual social impact of marihuana use. School and university administrators are seldom able to prevent the use of marihuana by their students and personnel and are increasingly reluctant to take disciplinary action against users. Within the criminal justice system, there has been a marked decline in the severity of the response to offenders charged with possession of marihuana.

In our survey of state enforcement activities, only 11% of all marihuana arrests resulted from active investigative activity, and most of those were in sale situations. For the most part, marihuana enforcement is a haphazard process; arrests occur on the street, in a park, in a car, or as a result of a phone call. Among those arrested, approximately 50% of the adults and 70% of the juveniles are not processed through the system; their cases are dismissed by the police, by the prosecutors or by the courts. Ultimately less than 6% of all those apprehended are incarcerated, and very few of these sentences are for possession of small amounts for personal use.

In the law enforcement community, the major concern is no longer marihuana but the tendency of some users to engage in other irresponsible activity, particularly the use of more dangerous drugs. Official sentiment now seems to be a desire to contain use of the drug as well as the drug subculture, and to minimize its spread to the rest of the youth population. Law enforcement policy, both at the Federal and State levels, implicitly recognizes that elimination is impossible at this time.

The active attempt to suppress all marihuana use has been replaced by an effort to keep it within reasonable bounds. Yet because this policy still reflects a view that marihuana smoking is itself destructive enough to justify punitive action against the user, we believe it is an inappropriate social response.

Marihuana's relative potential for harm to the vast majority of individual users and its actual impact on society does not justify a social policy designed to seek out and firmly punish those who use it. This judgment is based on prevalent use patterns, on behavior exhibited

by the vast majority of users and on our interpretations of existing medical and scientific data. This position also is consistent with the estimate by law enforcement personnel that the elimination of use is unattainable.

In the case of experimental or intermittent use of marihuana, there is room for individual judgment. Some members of our society believe the decision to use marihuana is an immoral decision. However, even during Prohibition, when many people were concerned about the evils associated with excessive use of alcohol, possession for personal use was never outlawed federally and was made illegal in only five States.

Indeed, we suspect that the moral contempt in which some of our citizens hold the marihuana user is related to other behavior or other attitudes assumed to be associated with use of the drug. All of our data suggest that the moral views of the overwhelming majority of marihuana users are in general accord with those of the larger society.

Having previously rejected the approval policy (option number one), we now reject the eliminationist policy (option number two). This policy, if taken seriously, would require a great increase in manpower and resources in order to eliminate the use of a drug which simply does not warrant that kind of attention.

DISCOURAGEMENT OR NEUTRALITY

The unresolved question is whether society should try to dissuade its members from using marihuana or should defer entirely to individual judgment in the matter, remaining benignly neutral. We must choose between policies of discouragement (number three) and neutrality (number four). This choice is a difficult one and forces us to consider the limitations of our knowledge and the dynamics of social change. A number of considerations, none of which is conclusive by itself, point at the present time toward a discouragement policy. We will discuss each one of them separately.

1. User Preference Is Still Ambiguous

Alcohol and tobacco have long been desired by large numbers within our society and their use is deeply ingrained in the American culture. Marihuana, on the other hand, has only recently achieved a significant foothold in the American experience, and it is still essentially used more by young people. Again, the unknown factor here is whether the sudden attraction to marihuana derives from its psychoactive virtues or from its symbolic status.

Throughout this Commission's deliberations there was a recurring awareness of the possibility that marihuana use may be a fad which, if not institutionalized, will recede substantially in time. Present data suggest that this is the case, and we do not hesitate to say that we would prefer that outcome. To the extent that conditions permit, society is well advised to minimize the number of drugs which may cause significant problems. By focusing our attention on fewer rather than more drugs, we may be better able to foster responsible use and diminish the consequences of irresponsible use.

The more prudent course seems to be to retain a social policy opposed to use, attempting to discourage use while at the same time seeking to deemphasize the issue. Such a policy leaves us with more options available when more definitive knowledge of the consequences of heavy and prolonged marihuana use becomes available.

2. Continuing Scientific Uncertainty Precludes Finality

In 1933 when Prohibition was repealed, society was cognizant of the effects of alcohol as a drug and the adverse consequences of abuse. But, because so many people wished to use the drug, policy-makers chose, to run the risk of individual indiscretion and decided to abandon the abstentionist policy. There are many today who feel that if the social, impact of alcohol use had then been more fully understood, a policy of discouragement rather than neutrality would have been adopted to minimize the negative aspects of alcohol use.

Misunderstanding also played an important part when the national government adopted an eliminationist, marihuana policy in 1937. The policy-makers knew very little about the effects or social impact of the drug; many of their hypotheses were speculative and, in large measure, incorrect.

Nevertheless, the argument that misinformation in 1937 automatically compels complete reversal of the action taken at that time is neither reasonable nor logical. While continuing concern about the effects of heavy, chronic use is not sufficient reason to maintain an overly harsh public policy, it is still a significant argument for choosing official discouragement in preference to official neutrality.

3. Society's Value System Is In a State of Transition

As discussed in Chapter I, two central influences in contemporary American life are the individual search for meaning within the context of an increasingly depersonalized society, and the collective search for enduring American values. In Chapter IV, we noted that society's present ambivalent response to marihuana use reflects these uncertainties.

For the reasons discussed in the previous Chapters, a sudden abandonment of an official policy of elimination in favor of one of neutrality toward marihuana would have a profound reverberating impact on social attitudes far beyond the one issue of marihuana use. We believe that society must have time to consider its image of the future. We believe that adoption of a discouragement policy toward marihuana at this time would facilitate such a reappraisal while official neutrality, under present circumstances, would impede it.

4. Public Opinion Presently Opposes Marihuana Use

For whatever reasons, a substantial majority of the American public opposes the use of marihuana, and would prefer that their fellow citizens abstain from using it. In the National Survey, 64% of the adult public agreed with the statement that "using marihuana is morally offensive" (40% felt the same way about alcohol).

Although this majority opinion is not by any means conclusive, it cannot be ignored. We are well aware of the skeptics in with which marihuana user, and those sympathetic to their wishes, view the policy making process; and we are particularly concerned about the indifference to or disrespect for law manifested by many citizens and particularly the youth.

However, we are also apprehensive about the impact of a major change in social policy on that larger segment of our population which supports the implications of the existing social policy. They, too, might lose respect for a policy-making establishment which appeared to bend so easily to the wishes of a "lawless" and highly vocal minority.

This concern for minimizing cultural dislocation must, of course, be weighed against the relative importance of contrary arguments. For example, in the case of desegregation in the South, and now in the North, cult-Lire shock had to be accepted in the light of the fundamental precept at issue. In the, case. of marihuana, there is no fundamental principle supporting the use of the drug, and society is not compelled to approve or be neutral toward

it. The opinion of the majority is entitled to greater weight.

Looking again to the experience with Prohibition, when an abstentionist policy for alcohol was adopted on the national level in 1918, its proponents were not blind to the vociferous opposition of a substantial minority of the people. By the late 1920's and early 1930's, the ambivalence of public opinion toward alcohol use and the unwillingness of large numbers of people to comply with the new social policy compelled reversal of that policy. Even many of its former supporters acknowledged its futility.

With marihuana, however, the prevailing policy of eliminating use had never been opposed to any significant degree until the mid-1960's. Unlike the prohibition of alcohol, which had been the subject of public debate off and on for 60 years before it was adopted, present marihuana policy has not until now engaged the public opinion process, some 50 years after it first began to be used. Majority sentiment does not appear to be as flexible as it was with alcohol.

5. Neutrality Is Not Philosophically Compelled

Much of what was stated above bespeaks an acute awareness by the Commission of the subtleties of the collective consciousness of the American people, as shown in the National Survey. There is a legitimate concern about what the majority of the non-using population thinks about marihuana use and what the drug represents in the public mind. The question is appropriately asked if we are suggesting that the majority in a free society may impose its will on an unwilling minority even though, as it is claimed, uncertainty, speculation, and a large degree of misinformation form the basis of the predominant opinion. If we have nothing more substantial than this, the argument goes, society should remain neutral.

... deal with this contention, one must distinguish between ends and means. Policy-makers must choose their objectives with a sensitivity toward the entire social fabric and a vision of the good society. In such a decision, the general public attitude is a significant consideration. The preferred outcome in a democratic society cannot be that of the policy-makers alone; it must be that of an informed public. Accordingly, the policy-maker must consider the dynamic relationship between perception and reality in the public mind. Is the public consensus based on a real awareness of the facts? Does the public really understand what is at stake? Given the best evidence available, would the public consensus remain the same?

Assuming that dominant opinion opposes marihuana use, the philosophical issue is raised not by the goal but by how it is implemented. At this point, the interests of the unwilling become important. For example, the family unit and the institution of marriage are preferred means of group-living and child-rearing in our society. As a society, we are not neutral. We officially encourage matrimony by giving married couples favorable tax treatment; but we do not compel people to get married. If it should become public policy to try to reduce the birth rate, it is unlikely that there will be laws to punish those who exceed the preferred family size, although we may again utilize disincentives through the tax system. Similarly, this Commission believes society should continue actively to discourage people from using marihuana, and any philosophical limitation is relevant to the means employed, not to the goal itself.

FOR THESE REASONS, WE RECOMMEND TO THE PUBLIC AND ITS POLICY-MAKERS A SOCIAL CONTROL POLICY SEEKING TO DISCOURAGE MARIHUANA USE, WHILE CONCENTRATING PRIMARILY ON THE

PREVENTION OF HEAVY AND VERY HEAVY USE.

We emphasize that this is a policy for today and the immediate future; we do not presume to suggest that this policy embodies eternal truth. Accordingly, we strongly recommend that our successor policy planners, at an appropriate time in the future, review the following factors to determine whether an altered social policy is in order: the state of public opinion, the extent to which members of the society continue to use the drug, the developing scientific knowledge about the effects and social impact of use of the drug, and the evolving social attitude toward the place of recreation and leisure in a work-oriented society. In our second Report next year we will carefully review our findings to see if our perceptions have changed or if society has changed at that time.

Implementing The Discouragement Policy

Choice of this social control policy does not automatically dictate any particular legal implementation. As we noted in Chapter 1, there is a disturbing tendency among participants in the marihuana debate to assume that a given statement of the drug's effects, its number of users or its social impact compels a particular statutory scheme.

Law does not operate in a social vacuum, and it is only one of the institutional mechanisms which society can utilize to implement its policies. Consequently, the evaluation of alternative legal approaches demands not only logic but also a delicate assessment of the mutual relationship between the law and other institutions of social control, such as the church, the family and the school.

THE ROLE OF LAW IN EFFECTIVE SOCIAL CONTROL

Social control is most effectively guaranteed by the exercise of individual self-discipline. Elementary social psychology teaches us that restraint generated within is infinitely more effective and tenacious than restraint imposed from without.

One of the participants at our "Central Influences" Seminar observed:

When people grow up into a society, the principal aim is to internalize drives-that is, I assume they come up with certain drives which can be satisfied in many ways and you're trying to internalize, ways of satisfying those drives which will be compatible with life in a community and also satisfying to the individual. The external restraints can only complement this, they cannot possibly substitute for it.

The supplemental effect of external restraints, particularly legal restraints, must also be weighed against the nature of the control sought. It was put this way at our Seminar:

Think of the social welfare function as a mountain-the hill of the Lords really. Large parts of it are something of a plateau; that is you can be all sorts of places on it and be safe. You don't have to maximize. This is an economist's fallacy. You can have all sorts of variations, you can be Socialists, Capitalists, Mormons, Adventists and get away with it-even Liberals. But there are cliffs, and you can fall off of them. This is what we are worrying about today. We are nervous about these cliffs.

The "no-no's"-as the kids call them-are the fences on these cliffs. That is, we have set up taboos and say there's a cliff there. Now -one of the problems socially is that we set up "no-no's" where there are no cliffs. There are no cliffs and people jump over these [fences] and

they say, "No cliffs! See no cliffs!" [Then, over other fences-and] chop-chop-chop-crash! See, it's just as dangerous to set up fences without any cliffs as not have fences where there are cliffs.

To this functional consideration of external restraint, we must also add the philosophical faith in the responsible exercise of individual judgment which is the essence of a free society. To illustrate, a preference for individual productivity underlies this society's opposition to indiscriminate drug use, the fact that so few of the 24 million Americans who have tried marihuana use it, or have used it irresponsibly, testifies to the extent to which they have internalized that value.

The hypothesis that widespread irresponsibility would attend freer availability of marihuana suggests not that a restrictive policy is in order but rather that a basic premise of our free society is in doubt. We note that the escalation thesis, used as an argument against marihuana rather than as a tool for understanding individual behavior, is really a manifestation of skepticism about individual vulnerabilities. For example, one-half of the public agreed with the statement that "if marihuana were made legal, it would make drug addicts out of ordinary people."

At the same time, we do feel that the threat of excessive use is most potent with the young. In fact, we think all drug use should continue to be discouraged among the young, because of possible adverse effects on psychological development and because of the lesser ability of this part of the population to discriminate between limited and excessive use.

Social policy implementation in this regard is extraordinarily difficult. For example, although existing social policies toward tobacco, alcohol and marihuana alike oppose their use by the young, those policies are far from being fully effective. For example:

Tobacco

The National Survey (1971) indicates that of young people age 12-to-17,

- 50 % have smoked at one, time or another;
- 15% smoke now; and
- At least 8% smoke at least a half a pack a day.

In a 1970 sample of smoking habits in the 12-to-18 population conducted for the National Clearinghouse for Smoking and Health, it was found that:

- 18.5% of the boys and 11.9 % of the girls were regular smokers; and
- About 8% of the boys and 5% of the girls smoked more than a half a pack a day.

Alcohol

The National Survey also ascertained the drinking pattern during the previous month of young people aged 12-to-17, finding that:

- At least 23% had used beer during that month, at least 14% had used wine and at least 12% had used hard liquor; and
- 6% had used beer five or more days during the months 3% had used wine five or more days, and 3% had used hard liquor five or more days.

Marihuana

Of the 12-to-17 population, the Survey found that:

- 15% of this population had tried marihuana;
- At least 6 % still use it; and

- Less than 1% use it once a day or more

The inclination of so many young people to experiment with drugs is a reflection of a so-called successful socialization process on one hand, and of society's ambivalence to the use of drugs on the other. This entire matter will occupy much of our attention in the coming year, but it is essential that we make a few anticipatory comments now.

This nation tries very had to instill in its children independence curiosity and a healthy self-assurance. These qualities guarantee a dynamic, progressive society. Where drugs are concerned, however, we have relied generally on authoritarianism and on obedience. Drug education has generally been characterized by overemphasis of scare tactics. Some segments of the population have been reluctant to inform for fear of arousing curiosity in young minds. Where drugs are concerned, young people are simply supposed to nod and obey. -

This society has always been and continues to be ambivalent about the non-medical (in the strict sense) use of drugs. And this ambivalence does not escape our children. If we can come to grips with this issue, we might convince our youth that the curiosity that is encouraged in other aspects of our culture is undesirable where drugs are concerned.

The law is at best a highly imperfect reflection of drug policy. The laws proscribing sale of tobacco to minors are largely ignored. Prohibitions of sale of alcohol to minors are enforced sporadically. As to marihuana, there are areas throughout this nation where possession laws are not enforced at all. In other sections, such proscriptions are strictly enforced, with no apparent decrease in marihuana use.

As a guiding doctrine for parents and children, the law is certainly confusing when it imposes widely varying punishments in different states, and even in different courts of the same state, all for use of the same substance, marihuana. That marihuana use can be treated as a petty offense in one state and a felony in another is illogical and confusing to even the most sincere of parents.

The law is simply too blunt an instrument to manifest the subtle distinctions we draw between the motivations and the circumstances of use. At the same time, legal status carries a certain weight of its own, and other institutions must take account of the law in performing their functions.

In legally implementing our recommended social policy, we seek to maximize the ability of our schools, churches and families to be open and honest in discussing all drugs, including marihuana. The law must assist, not impede. In this respect, we note with concern the counterproductive tendency in our society to seek simple solutions to complex problems. Since the statutory law is a simple tool, the tendency in our society to look to the law for social control is particularly strong.

We have discussed the four basic social policy objectives of elimination, discouragement, neutrality and approval of marihuana use and have selected discouragement of use, with emphasis on prevention of heavy and very heavy use, as our generalized aim. We have considered three legal responses, each with a wide range of alternatives:

1. Total Prohibition.

2. Partial Prohibition.

3. Regulation.

TOTAL PROHIBITION

The distinctive feature of a total prohibition scheme is that all marihuana-related behavior is prohibited by law. Under the total prohibition response now in force in every state and at the federal level, cultivation, importation, sale, gift or other transfer, and possession are all prohibited acts. In 11 states and the District of Columbia, simply being present knowingly in a place where marihuana is present is also prohibited; and many states prohibit the possession of pipes or other smoking paraphernalia. For our purposes, the key feature of the total prohibition approach is that even possession of a small amount in the home for personal use is prohibited by criminal law.

From the very inception of marihuana control legislation, this nation has utilized a policy of a total prohibition, far more comprehensive than the restrictions established during the prohibition of alcohol.

Until recent years, society was operating under an eliminationist policy. The exaggerated beliefs about the drug's effects, social impact, and user population virtually dictated this legal approach. During this entire, period, total prohibition was sought through the use of heavier and heavier penalties until even first-time possession was a felony in every jurisdiction, and second possession offenses generally received a mandatory minimum sentence without parole or probation. Yet the last few years have seen society little by little abandoning the eliminationist policy in favor of a containment policy.

Under the total prohibition umbrella, this containment policy has been implemented by a unique patchwork of legislation, informal prosecutorial policy and judicial practice. Possession is now almost everywhere a misdemeanor. Although some term of incarceration remains as a penalty for possessors, it is generally not meted out to young first offenders or to possessors of small -amounts. Instead, most such offenders are dismissed or informally diverted to agencies outside the criminal system by those within the system who are trying to help them avoid the stigma of a criminal record.

Offenders who are processed within the criminal justice system generally receive fines and or probation. In many jurisdictions, enforcement officials make little or no effort to enforce possession proscriptions, concentrating instead on major trafficking. Possessors are generally arrested only when they are indiscreet or when marihuana is found incident to questioning or apprehension resulting from some other violation. From our surveys, state and federal, we have found that only minimal effort is made to investigate marihuana possession cases.

Such a tendency is a reflection of the adoption of a containment policy. By acting only when marihuana appears above ground, enforcement officials are helping to keep its use underground. The shift away from the elimination policy has been matched by a similar shift in legal implementation, but the distinctive feature of the total prohibition scheme still remains: all marihuana-related behavior, including possession for personal use within the home, is prohibited by criminal law.

Is such a response an appropriate technique for achieving the social control policy we outlined above? The key question for our purposes is whether total criminal prohibition is the most suitable or effective way to discourage use and whether it facilitates or inhibits a concentration on the reduction and treatment of irresponsible use. We are convinced that total prohibition frustrates both of these objectives for the following reasons.

1. Application of the Criminal Law to Private Possession Is Philosophically Inappropriate

With possession and use of marihuana, we are dealing with a form of behavior which occurs generally in private where a person possesses the drug for his own use. The social impact of this conduct is indirect, arising primarily in cases of heavy or otherwise irresponsible use and
from the drugs symbolic aspects. We do not take the absolutist position that society is philosophically forbidden from criminalizing any kind of "private" behavior. The phrase "victimless crimes," like "public, health hazard, has become a rhetorical excuse for avoiding basic social policy issues. We have chosen a discouragement policy on the basis of our evaluation of the actual and potential individual and social impact of marihuana use. Only now that we have done so can we accord appropriate weight to the nation's philosophical preference for individual privacy.

On the basis of this evaluation we believe that the criminal law is too harsh a tool to apply to personal possession even in the effort to discourage use. It implies an overwhelming indictment of the behavior which we believe is not appropriate. The actual and potential harm of use of the drug is not great enough to justify intrusion by the criminal law into private behavior, a step which our society takes only 'with the greatest reluctance.

2. Application of the Criminal Law Is Constitutionally Suspect

The preference for individual privacy reflected in the debate over the philosophical limitations on the criminal law is also manifested in our constitutional jurisprudence. Although no court, to our knowledge, has held that government may not prohibit private possession of marihuana, two overlapping constitutional traditions do have important public policy implications in this area.

The first revolves around the concept that in a free society, the legislature may act only for public purposes. The "police powers" of the states extend only to the "public health, safety and morals." In the period of our history when the people most feared interference with their rights by the government, it was generally accepted that this broad power had an inherent limitation. For example, early prohibitions of alcohol possession were declared unconstitutional on the basis of reasoning such as that employed by the Supreme Court of Kentucky in 1915 in the case of Commonwealth v. Campbell:

It is not within the competency of government to invade the privacy of the citizen's life and to regulate his conduct in matters in which alone is concerned, or to prohibit him any liberty the exercise which will not directly injure society.

Noting that the defendant was "not charged with having the liquor in his possession for the purpose of selling it, or even giving it to another," and that "ownership and possession cannot be denied when that ownership and possession is not in itself injurious to the public," the Kentucky court concluded that:

The right to use liquor for one's own comfort, if they use it without injury to the public, is one of the citizen's natural and inalienable rights.... We hold that the police power-vague and wide and undefined as it is-has limits. . . .

Even the perceived dangers of opium were not enough to convince some members of the judiciary that the government could prohibit possession. It is historically instructive to

consider these words, penned in 1890, by Judge Scott in Ah Lim v Territory:

I make no question but that the habit of smoking opium may be repulsive and degrading. That its effect would be to shatter the nerves and destroy the intellect; and that it may tend to the increase of the pauperism and crime. But there is a vast difference between the commission of a single act, and a confirmed habit. There is a distinction to be recognized between the use and abuse of any article or substance.... If this act must be held valid it is hard to conceive of any legislative action affecting the personal conduct, or privileges of the individual citizen, that must not be upheld.... The prohibited act cannot affect the public in any way except through the primary personal injury to the individual, if it occasions him any injury. It looks like a new and extreme step under our government in the field of legislation, if it really was passed for any of the purposes upon which that character of legislation can be sustained, if at all.

As a matter of constitutional history, a second tradition, the application of specific provisions in the Bill of Rights, has generally replaced the notion of "inherent" limitations. The ultimate effect is virtually the same, however. The Fourth Amendment's proscription of "unreasonable searches and seizures" reflects a constitutional commitment to the value of individual privacy. The importance of the Fourth Amendment to the entire, constitutional scheme was eloquently described by Justice Brandeis in 1928 in the case of Olmstead v U.S.:

The makers of our Constitution undertook to secure conditions favorable to the pursuit of happiness. They recognized the significance of man's spiritual nature, of his feelings and his intellect. They knew that only a part of the pain, pleasure and satisfaction of life are to be found in material things. They sought to protect Americans in their beliefs, their thoughts, their emotions and their sensations. They conferred, as against the Government, the right to be let alone-the most comprehensive of rights and the right most valued by civilized men.

Although the Fourth Amendment is itself a procedural protection, the value of privacy which it crystallizes is often read in conjunction with other important values to set substantive limits on legislative power. The Supreme Court, in the case of Griswold vs. Connecticut, held in 1965 that Connecticut could not constitutionally prohibit the use of birth control devices by married persons. Although the Justices did not agree completely on the reasons for their decision, Justice Douglas stated in the opinion of the Court:

The present case, then, concerns a relationship lying within the zone of privacy created by several fundamental constitutional guarantees. And it concerns a law which, in forbidding the use of contraceptives rather than regulating their manufacture or sale, seeks to achieve its goals by means of having a maximum destructive impact upon that relationship. Such a law cannot stand in light of the familiar principle, so often applied by this Court, that a "governmental purpose to control or prevent activities constitutionally subject to state regulation may not be achieved by means which sweep unnecessarily broadly and thereby invade the area of protected freedom." (citation omitted) Would we allow the police to search the sacred precincts of marital bedrooms for telltale signs of the use of contraceptives? The very idea is repulsive to the notions of privacy surrounding the marriage relationship.

Four years later, the Supreme Court, in Stanley v. Georgia, held that even though obscenity is not "speech" protected by the First Amendment, a state cannot constitutionally make private possession of obscene material a crime. The Court's reasoning is revealed in the following language:

[The] right to receive information and ideas, regardless of their social worth, (citation omitted), is fundamental to our free society. Moreover, in the context of this case- a prosecution for mere possession of printed or filmed matter in the privacy of a person's own home-that right takes on an added dimension. For also fundamental is the right to be free, except in very limited circumstances, from unwanted governmental intrusions into one's privacy ...

While the judiciary is the governmental institution most directly concerned with the protection of individual liberties, all policy-makers have a responsibility to consider our constitutional heritage when framing public policy. Regardless of whether or not the courts would overturn a prohibition of possession of marihuana for personal use in the home, we are necessarily influenced by the high place traditionally occupied by the value of privacy in our constitutional scheme.

Accordingly, we believe that government must show a compelling reason to justify invasion of the home in order to prevent personal use of marihuana. We find little in marihuana's effects or in its social impact to support such a determination. Legislators enacting Prohibition did not find such a compelling reason 40 years ago; and we do not find the situation any more compelling for marihuana today.

3. Total Prohibition Is Functionally Inappropriate

Apart from the philosophical and constitutional constraints outlined above, a total prohibition scheme carries with it significant institutional costs. Yet it contributes very little to the achievement of our social policy. In some ways it actually inhibits the success of that policy.

The primary goals of a prudent marihuana social control policy include preventing irresponsible use of the drug, attending to the consequences of such use, and deemphasizing use in general. Yet an absolute prohibition of possession and use inhibits the ability of other institutions to contribute actively to these objectives. For example, the possibility of criminal prosecution deters users who are experiencing medical problems from seeking assistance for fear of bring attention to themselves. In addition, the illegality of possession and use creates difficulties in achieving an open, honest educational program, both in the schools and in the home.

In terms of the social policy objective of discouraging use of the drug, the legal system can assist that objective in three ways: first, by deterring people from use; second, by symbolizing social opposition to use; and finally, by cutting off supply of the drug.

The present illegal status of possession has not discouraged an estimated 24 million people from trying marihuana or an estimated eight million from continuing to use it. Our survey of the country's state prosecuting attorneys shows that 53% of them do not believe that the law has more than a minimal deterrent effect in this regard. Moreover, if the present trend toward passive enforcement of the marihuana law continues, the law ultimately will deter only indiscreet use, a result achieved as well by a partial prohibition scheme and with a great deal more honesty and fairness.

A major attraction of the law has been its symbolic value. Yet, society can symbolize its desire to discourage marihuana use in many other, less restrictive ways. The warning labels

on cigarette packages serve this purpose, illustrating that even a regulatory scheme could serve a discouragement policy. During Prohibition, the chosen statutory implementation symbolized society's opposition to the use of intoxicating beverages; yet, most jurisdictions did not think it necessary to superimpose a proscription of possession for personal use in the home.

Finally, prohibiting possession for personal use has no substantive relation to interdicting supply. A possession penalty may make enforcement of proscriptions against sale a little easier, but we believe this benefit is of minimal importance in light of its costs.

The law enforcement goal repeatedly stated at both the federal and state levels has been the elimination of supply and the interdiction of trafficking. These avowed aims of law enforcement make sense, since they are the most profitable means of employing its manpower and resources in this area.

Indeed, the time consumed in arresting Possessors is inefficiently used when contrasted with the same amount of time invested in apprehending major dealers. Although a credible effort to eliminate supply requires prohibitions of importation, sale and possession-with intent-to-sell, the enforcement of a proscription of possession for personal use is minimally productive.

As noted, most law enforcement officials, district attorneys and judges recognize the ineffectiveness of the possession penalty, as a deterrent. Its perpetuation results in the making of what is commonly referred to as "cheap" cases that have little or no impact on deterring sale.

The marihuana supply system can be viewed as pyramid with the major bulk of marihuana entering the system at top of the pyramid and then descending to the base which represents the user population. Common sense dictates where law enforcement should devote its efforts. To remove the profit from the traffic requires arresting sellers, not users. The oft-heard argument that the police need possession penalties to compel users to reveal their sources is not convincing. "Turning informants" at the base of the pyramid is of marginal value and limited utility in reaching upwards toward the apex. Further, the National Survey showed that 60% of the users don't "buy" marihuana but get it from a friend. The volume of traffic in the drug at these levels is at best minimal.

In short, personal possession arrests and even casual sales, which account for more than 95% of the marihuana arrests at the state local level, occur too low in the chain of distribution to diminish supply very effectively.

In addition to the misallocation of enforcement resources, another consequence of prohibition against possession for personal use is the social cost of criminalizing large numbers of users. Our empirical study of enforcement of state and federal marihuana laws indicates that almost all of those arrested are between the ages of 18 and 25, most have jobs or are in school, and most have had no prior contact -with the criminal justice system. The high social cost of stigmatizing such persons as criminals is now generally acknowledged by the public at large as well as by those in the criminal justice system.

According to the National Survey, 53% of the public was unwilling to give young users a criminal record and 87% objected to putting them in jail. The nation's judges expressed an overwhelming disinclination to sentence and convict users for marihuana possession. Of these judges only 13% thought it was appropriate to incarcerate ail adult for possession and only 4% would jail a juvenile for marihuana possession. This disinclination is reflected in the low percentage of arrested users who are convicted, and the even lower percentage who

are jailed.

Even among the nation's prosecutors, a substantial majority favor the present trend toward avoiding incarceration for first offenders. Most jurisdictions have devised informal procedures for disposing of cases in lieu of prosecution. Our empirical study shows that 48% of the adult cases, and 70% of the juvenile cases, were dropped from the system at some point between arrest and conviction. The picture displayed is one of a large expenditure of police manpower to enforce a law most participants further along the line are not anxious to apply.

Other disturbing consequences of laws proscribing possession for personal use are the techniques required to enforce them. Possession of marihuana is generally a private behavior; in order to find it, the police many times must operate on the edge of constitutional limitations. Arrests without probable cause, illegal searches and selective enforcement occur often enough to arouse concern about the integrity of the criminal process.

Yet another consequence of marihuana possession laws is the clogging of judicial calendars. President Nixon has noted that one of the major impediments to our nation's efforts to combat serious crimes is the fact that the judicial machinery moves so slowly. Swift -arrests, prosecution, trial and sentence would significantly improve the deterrent effect of law. Yet the judicial system is overloaded with petty cases, with public drunkenness accounting for about 50% of all non-traffic offenses.

In his March 1971 address to the National Conference on the Judiciary, President Nixon said:

What can be done to break the logjam of justice today, to ensure the right to a speedy trial- and to enhance respect for law? We have to find ways to clear the courts of the endless stream of "victimless crimes" that get in the way of serious consideration of serious crimes. There are more important matters for highly skilled judges and prosecutors than minor traffic offenses, loitering and drunkenness.

To this list we would add marihuana possession, which accounts for a rising percentage, of judicial caseloads. In Chicago alone, during the last half of 1970, there were more than 4,000 possession arrests.

A final cost of the possession laws is the disrespect which the laws and their enforcement engender in the young. Our youth cannot understand why society chooses to criminalize behavior with so little visible ill-effect or adverse social impact, particularly when so many members of the law enforcement community also question the same laws. These young people have jumped the fence and found no cliff. And the disrespect for the possession laws fosters a disrespect for all law and the system in general.

On top of all this is the distinct impression among the youth that police may use the marihuana laws to arrest people they don't like for other reasons, whether it be their politics, their hair style or their ethnic background. Whether or not such selectivity actually exists, it is perceived to exist.

For all these reasons, we believe that the possession offense is of little functional benefit to the discouragement policy and carries heavy social costs, not the least of which is disrespect and cynicism among some of the young. Accordingly, even under our policy of discouraging marihuana use, the better method is persuasion rather than prosecution. Additionally, with the sale and use of more hazardous drugs on the increase, and crimes of violence escalating, we do not believe that the criminal justice system can afford the time and

the costs of implementing the marihuana possession laws. Since these laws are not mandatory in terms of achieving the discouragement policy, law enforcement should be allowed to do the job it is best able to do: handling supply and distribution.

A criminal fine or similar penalty for possession has been suggested as a means of alleviating some of the more glaring costs of a total prohibitory approach yet still retaining the symbolic disapproval of the criminal law. However, most of the objections raised above would still pertain: the possibilities of invasion of personal privacy and selective enforcement of the law would continue; possessors would still be stigmatized as criminals, incurring the economic and social consequences of involvement with the criminal law; the symbolic status of marihuana smoking as an anti-establishment act would be perpetuated.

On the other hand, a fine most likely would deter use no more than does the present possibility of incarceration. It would continue to impede treatment for heavy and very heavy use and would persist in directing law enforcement away from the policy's essential aim which is to halt illegal traffic in the drug.

For all these reasons, we reject the total prohibition approach and its variations.

REGULATION

Another general technique for implementing the recommended social policy is regulation. The distinguishing feature of this technique is that it institutionalizes the availability of the drug. By establishing a legitimate channel of supply -and distribution, society can theoretically control the quality and potency of the product. The major alternatives within this approach lie in the variety of restraints which can be imposed on consumption of the drug and on the informational requirements to which its distribution can be subject.

We have given serious consideration to this set of alternatives; however, we are unanimously of the opinion that such a scheme, no matter how tightly it might restrict consumption, is presently unacceptable.

1. Adoption of a Regulatory Scheme at this Time Would Inevitably Signify Approval of Use

In rejecting the total prohibition approach, we emphasized the symbolic aspects. In essence, we do not believe prohibition of possession for personal use is necessary to symbolize a social policy disapproving the use. Theoretically, a tightly controlled regulatory schemes with limited distribution outlets, significant restraints on consumption prohibition of advertising and compulsory labeling, could possibly symbolize such disapproval. Our regulatory policy toward tobacco is beginning to slowly to reflect a disapproval policy toward Cigarette smoking. Nonetheless, given the social and historical context of such a major shift in legal policy toward marihuana, we are certain that such a change would instead symbolize approval of use, or at least a position of neutrality.

The Commission is concerned that even neutrality toward use as a matter of policy could invest an otherwise transient phenomenon with the status of an accepted behavior. If marihuana smoking were an already ingrained part of our culture, this objection would be dispelled. However, we do not believe that this is the case,. We are inclined to believe, instead, that the present interest in marihuana is transient and will diminish in time of its own accord once the major symbolic aspects of use are deemphasized, leaving among our population only a relatively small coterie of users. With this possibility in mind, we are

hesitant to adopt either a policy of neutrality or a regulatory implementation of our discouragement policy. The law would inevitably lose its discouragement character and would become even more ambiguous in its rationale and its enforcement.

The effect of changing a social policy direction may be seen with tobacco policy. In recent years, society has ostensibly adopted a policy of discouraging cigarette smoking. This new policy has been implemented primarily in the information area through prohibition of some forms of advertising and through compulsory labeling. Yet, the volume, of cigarettes used increased last year. We believe that the failure of the new policy results from the fact that it supplants one that formerly approved use. This set of circumstances argues against any policy which would be regarded as approval of use, including a regulatory scheme. It is always extremely difficult to transform a previously acceptable behavior into a disapproved behavior.

2. Adoption of a Regulatory Scheme Might Generate a Significant Public Health Problem

We noted above that institutionalizing availability of the drug would inevitably increase the incidence of use, even though that incidence might otherwise decrease. Of greater concern is the prospect that a larger incidence of use would result in a larger incidence of long term heavy and very heavy use of potent preparations.

There are -now approximately 500,000 heavy users of less potent preparations in this country, representing about 2% of those who ever tried the drug. Even if the prevalence of - heavy use remained the same in relation to those who ever used, this at-risk population would inevitably increase under a regulatory scheme. If the emotional disturbances found in very heavy hashish users in other countries were to occur in this country, the adverse social impact of marihuana use, now slight, would increase substantially.

We have acknowledged that society, nonetheless, chose to run such a risk in 1933, when Prohibition was repealed. But alcohol use was already well-established in this society, and no alternative remained other than a regulatory approach. In light of our suspicion that interest in marihuana is largely transient, it would be imprudent to run that risk for marihuana today.

3. Adoption of a Regulatory Scheme Would Exacerbate Social Conflict and Frustrate a Deemphasis Policy

A significant segment of the public on both sides of the issue views marihuana and its "legalization" in a highly symbolic way. Any attempt to adopt a regulatory approach now would be counterproductive in this respect. The collision of values resulting from such a dramatic shift of policy would maintain the debate at a highly emotional level and would perpetuate the tendency to perceive marihuana use as a symbol of the struggle between two conflicting philosophies.

4. Not Enough Is Known About Regulatory Models In This Area

Advocates of legalization of marihuana are often inclined to propose a licensing scheme or an "alcohol model" without offering a specific program of regulation taking all the variables into account. Responsible policy planning cannot be so cursory. Consequently, we have

given serious study to the many issues presented by such a scheme and to the nation's experience with other drug licensing schemes. On the basis of our inquiry, we are convinced that such a step should not be taken unless a realistic assessment of the efficacy of existing schemes and their potential application to marihuana indicates it would be successful. Such an assessment raises a number of disturbing questions.

The regulatory approaches which this nation has used in the cases of alcohol and tobacco have failed to accomplish two of their most important objectives: the minimization of excessive use and the limitation of accessibility to the young. Despite the warning and restraints on distribution and consumption, more than 50 million Americans smoke cigarettes regularly, and more than nine million Americans are "problem" drinkers. We have previously cited data indicating how many of our children begin habits which have been legally forbidden to them. Since the young user and the chronic user of marihuana are of primary concern to our public health officials, the lack of success with alcohol and tobacco discourages an assumption that the regulation of supply would minimize use by the younger generation.

Another important purpose of a regulatory scheme is to channel the product through a controlled system of supply and distribution. In that way the quality and quantity of the substance can be regulated. The efficacy of such a scheme as applied to marihuana is questionable.

Cannabis can be grown easily almost anywhere in the United States with little or no human assistance. Even if a legitimate source of supply were established, it is likely that many persons would choose to ignore the legitimate source and grow their own, the purity of which would not be in question. If such a practice were illegal, the necessity for a concerted governmental eradication program is raised, which would involve a monumental law enforcement effort. According to the U.S. Department of Agriculture, there are presently an estimated five million acres of wild marihuana growing in this country and an undetermined number of acres under cultivation.

Yet, if such a practice were not forbidden, the revenue-raising, product-control and consumption-restriction features of a regulatory scheme would be threatened. Instructive to note is the fact that intensive regulation of alcoholic beverage production has not eliminated illicit production. During 1970, in fact, 5,228 illegal stills were destroyed by the Alcohol, Tobacco and Firearms Division of the U.S. Treasury and 5,279 persons were arrested. In 1971, 3,327 illegal stills were destroyed and 5,512 persons were arrested.

Another disturbing question is raised by the issue of potency regulation. Most advocates of legalization stipulate potency limitations as one feature of their scheme. Presumably they would limit the THC content of the regulated product. This is not an easy undertaking. Especially when cannabis is so easily grown and a black market is so easily created, we are dubious about the success of a regulatory scheme distributing only a product with low THC content. Again, attention must be paid the prospect of increased hashish use under a regulatory scheme; merely stipulating potency control is not sufficient. As we noted in Chapter II, the heavy, long-term use of hashish is a source of major concern to the Commission from both private and public health standpoints.

These are a few of the problems confronting the policy-maker if he seeks to devise an effective regulatory system of distribution for what is, in fact, a universally common plant. Our doubts about the efficacy of existing regulatory schemes, together with an uncertainty about the permanence of social interest in marihuana and the approval inevitably implied by adoption of such a scheme, all impel us to reject the regulatory approach as an appropriate implementation of a discouragement policy at the present time.

Future policy planners might well come to a different conclusion if further study of existing schemes suggests a feasible model; if responsible use of the drug does indeed take root in our society; if continuing scientific and medical research uncovers no long-term ill effects; if potency control appears feasible and if the passage of time and the adoption of a rational social policy sufficiently desymbolizes marihuana so that availability is not equated in the public mind with approval.

PARTIAL PROHIBITION

The total prohibition scheme was rejected primarily because no sufficiently compelling social reason, predicated on existing knowledge, justifies intrusion by the criminal justice system into the private lives of individuals who use marihuana. The Commission is of the unanimous opinion that marihuana use is not such a grave problem that individuals who smoke marihuana, and possess it for that purpose, should be subject to criminal procedures. On the other hand, we have also rejected the regulatory or legalization scheme because it would institutionalize availability of a drug which has uncertain long-term effects and which may be of transient social interest.

Instead we recommend a partial prohibition scheme which we feel has the following benefits:

Symbolizing a continuing societal discouragement of use;

Facilitating the deemphasis of marihuana essential to answering dispassionately so many of the unanswered questions;

Permitting a simultaneous medical, educational, religious, and parental effort to concentrate on reducing irresponsible use and remedying its consequences;

Removing the criminal stigma and the threat of incarceration from a widespread behavior (possession for personal use) which does not warrant such treatment;

Relieving the law enforcement community of the responsibility for enforcing a law of questionable utility, and one which they cannot fully enforce thereby allowing concentration on drug trafficking and crimes against persons and property;

Relieving the judicial calendar of a large volume of marihuana possession cases which delay the processing of more serious cases; and

Maximizing the flexibility of future public responses as new information comes to light.

No major change is required in existing law to achieve all of these benefits. In general, we recommend only a decriminalization of possession of marihuana for personal use on both the state and federal levels. The major features of the recommended scheme are that: production and distribution of the drug would remain criminal activities as would possession with intent to distribute commercially; marihuana would be contraband subject to confiscation in public places; and criminal sanctions would be withdrawn from private use and possession incident to such use, but, at the state level, fines would be imposed for use in public.*

Specifically, we recommend the following statutory schemes.

RECOMMENDATIONS FOR FEDERAL LAW

Under the Comprehensive Drug Abuse Prevention and Control Act of 1970, Congress provided the following scheme with respect to marihuana, by which was meant only the natural plant and its various parts, not the synthetic tetrahydrocannabinol (THC) :

- Cultivation, importation and exportation, and sale or distribution for profit of marihuana are all felonies punishable by imprisonment for up to five years for a first offense and by up to 10 years for a second offense (the available penalty is doubled for sale to a minor).
- Possession of marihuana with intent to distribute is a felony punishable by imprisonment for up to five years for the first offense and by up to 10 years for a second offense.
- Possession of marihuana for personal use is a misdemeanor punishable by up to one year in jail and a $1,000 fine for first offense and by up to two years in jail and a $2 000 fine for second offense (expungement of criminal record is available for first offenders).
- Transfer of a small amount of marihuana for no remuneration is a misdemeanor punishable by up to one year in jail and a $1,000 fine for first offense and by up to two years in jail and a $2,000 fine for second offense (Congress singled out marihuana in this way to allow misdemeanor treatment of casual transfers and permitted first offender treatment, as allowed for possession for personal use).

The Commission recommends only the following changes in federal law:

- POSSESSION OF MARIHUANA FOR PERSONAL USE WOULD NO LONGER BE AN OFFENSE, BUT MARIHUANA POSSESSED IN PUBLIC WOULD REMAIN CONTRABAND SUBJECT TO SUMMARY SEIZURE AND FORFEITURE.
- CASUAL DISTRIBUTION OF SMALL AMOUNTS OF MARIHUANA FOR NO REMUNERATION, OR INSIGNIFICANT REMUNERATION NOT INVOLVING PROFIT WOULD NO LONGER BE AN OFFENSE.

The Commission further recommends that federal law be supplemented to provide:

- A PLEA OF MARIHUANA INTOXICATION SHALL NOT BE A DEFENSE TO ANY CRIMINAL ACT COMMITTED UNDER ITS INFLUENCE, NOR SHALL PROOF OF SUCH INTOXICATION CONSTITUTE A NEGATION OF SPECIFIC INTENT.

* Commissioners Rogers, Congressman from Florida, and Carter, Congressman from Kentucky, agree with the Commission's selection of a discouragement policy and also agree that criminalization and incarceration of individuals for possessing marihuana for their own use is neither necessary nor desirable as a means of implementing that policy.

At the same time, both Commissioners feel that the contraband concept is not a sufficiently strong expression of social disapprobation and would recommend in addition a civil fine for possession of any amount of marihuana in private or in public.

Both Commissioners feel that the civil fine clearly symbolizes societal disapproval and is a simple mechanism for law enforcement authorities to carry out. If a person is found by a law enforcement officer to be in possession of marihuana, the officer would issue such person a summons to appear in court on a fixed day. Although a warrant would not issue for Research of a private residence unless there were probable cause to believe a criminal offense was being committed, a police officer legitimately present for other reasons could issue a civil summons for violation of the "possession" proscription.

Commissioners Rogers and Carter believe that the legal system must be utilized directly to discourage the person from using marihuana rather than being utilized only indirectly as In the case of contraband.

This civil fine would not be reflected in a police record, nor would it be considered a criminal act for purposes of future job consideration, either in the private sector or for government service.

Agreeing with the other Commissioners that the casual transfers of marihuana for no profit should be treated in the same manner as possession for one's own use, Congressmen Rogers and Carter do not agree that it should extend to transfers involving remuneration. They prefer the limiting language of the Comprehensive Drug Abuse Prevention and Control Act of 1970 which does not include the term "or insignificant remuneration not involving a profit."

Apart from the addition of the civil fine to the contraband recommendation in the respects set out above, Congressmen Carter and Rogers are in complete agreement with the statutory recommendations set out in the Report.

Commissioner Ware concurs completely with the statements made by Congressmen Rogers and Carter but wishes to reemphasize that the social policy and legal scheme adopted is applicable only to marihuana and should not be construed to embrace other psychoactive drugs. The policy set forth in this Report, subject to the already noted comments of the two Congressional Commissioners, makes sense for marihuana on the basis of what is known about the drug and in the absence of any conclusive showing which would verify some of the anecdotal law enforcement testimony heard by the Commission regarding criminal behavior exhibited while under the influence of marihuana.

Commissioner Ware feels that some penalty short of criminalizing the user, such as a civil fine or some type of intensive drug education, will act as a positive deterrent toward minimizing the incidence of marihuana use especially among the young. Further, he is opposed to the use of any drug for the express purpose of getting intoxicated, and includes alcohol within this category. The Commissioner feels that what is needed is an internalizing of discipline among our citizenry, with the legal system assisting this process through the use of disincentives.

Commissioners Hughes, Senator from Iowa, and Javits, Senator from New York, feel that the Commission has taken a major, highly laudable step in recommending that the private use of marihuana be taken out of the criminal justice system. They concur in its threshold judgment that overall social policy regarding this drug should seek to discourage use, while concentrating primarily on the prevention of irresponsible use. They disagree, however, with three specific recommendations relating to the implementation of this discouragement policy.

First, they would eliminate entirely the contraband provision from the partial prohibitory

model adopted by the Commission. They want it eliminated first because its legal implications are confusing and the subject of disagreement even among lawyers. Whether or not possession of a given substance is criminal, possession of material designated as contraband makes that possession unlawful. Also, marihuana designated as contraband would be subject to government search and seizure, even though the underlying possession is no longer criminal. The provision-which does not apply to marihuana held for personal use within the home is considered by both Commissioners to be an unnecessary "symbol" of the discouragement policy. It will not foster elimination of the misunderstanding and mistrust which is a hallmark of our current marihuana policy.

Commissioner Hughes and Javits seek to eliminate it also because as a practical matter it serves no useful law enforcement purpose within the overall partial prohibitory model. If marihuana held for personal use within the home is not contraband, why should marihauna held for personal use within one's automobile be contraband? The area of operation of the contraband provision is extremely narrow. if one possesses more than one ounce of marihuana in public, it may be seized without regard to the contraband doctrine since such possession is a criminal violation.

Since the contraband provision does not apply to marihuana possession and use in private, the only effective area covered by the contraband provision is the area of possession in public of less than one ounce. The Commission has chosen to remove the stigma of the criminal sanction in this kind of case. To impose instead a contraband provision, which it is argued is in the nature of a civil "in rem" seizure which does not operate against the person, is to cloud the issue and to weaken the force of the basic decriminalization. A persuasive justification simply has not been made.

Both Commissioners seek to eliminate it also because they believe that the voice of the Commission should be loud and clear that the preservation of the right of privacy is of paramount importance and cannot be casually jeopardized in the pursuit of some vague public or law enforcement interest which has not been defined and justified with clarity and precision.

The second area of disagreement with the Commission's recommendations concerns the casual distribution of marihuana and the not-for-profit sale. As understood:

(1) The totally donative transfer is not subject to criminal penalty, regardless of where it takes place.

(2) The transfer of small amounts for insignificant remuneration not involving a profit is not subject to criminal penalty (except if it is accomplished in public, in which case it is subject to crimin. ' sanction), but (3) The transfer of "large amounts" for "significant" remuneration not involving a profit is subject to criminal penalty.

Footnote 4 on page 158 of the Report the Commission refers to a Report of The Senate Judiciary Committee on the Comprehensive Drug Abuse Prevention and Control Act of 1970. In substance, it implies that within the meaning of the Act, transfers of -more than one or two marihuana cigarettes in return for 50 cents or one dollar to cover cost are not intended to be covered as casual transfers, but rather are to be treated as unlawful sales.

Commissioners Hughes and Javits feel that the Commission has failed to set forth a clear standard which will adequately inform the public of their obligations under the law. The recommendation and its discussion in the Report are confusing and fail to provide the individual with sufficient guidance to allow him to act without having to dodge in and out of

illegality. It also undermines a basic, stated objective of the Commission i.e., to concentrate the weight of the criminal sanction upon significant supply and distribution activities, rather than upon casual consumption.

Moreover, proscribing even the most casual not-for-profit transfers when they occur in public is, in their opinion, wrong. Such transfers are necessarily incident to private possession and use. To hold that they should be subject to criminal sanction is logically inconsistent with the Commission's rationale and recommendation on decriminalization of such private activities.

Instead, both Commissioners recommend that all not-for-profit sales be excluded from the criminal sanction. It Is fundamental that there be a clear separation between the serious, commercial, profit-making-seller, or "pusher" as he is known, and the individual who merely splits the cost of a reasonable supply of the drug with his friends or acquaintances.

Thirdly, exception is taken to the retention of the criminal sanction on public possession of more than one ounce. The individual who buys an ounce and a half would be a criminal when he buys on the corner, when he puts it in his pocket, when he gets in his car and drives home, when he is on his doorstep, but not when he crosses the threshold of his home. Commission policy should direct the attention of the law enforcement community to the person who sells the drug for profit, and not to the person who uses the drug privately.

If an individual has more than a few ounces in his possession, and there is probable cause to believe that he intends to sell it for profit, that activity is already covered under the Commission's recommendation that possession with intent to sell is illegal. Therefore, there is no need to further proscribe simple public possession.

All the component parts of the recommended policy of the Commission should be consistent with its objective of non-interference with casual transfers and possession and use which is essentially and fundamentally private and personal.

The contraband device, the not-for-profit sale, and public possession of some reasonable amount which should be presumed to be necessarily incident to private use should all be removed from the ambit of legal sanction. To do so would be to strike down "symbols" of a public policy which had never been adequately justified in the first instance. Such steps would in no way jeopardize the firm determination of the Commission that the use of marihuana ought to be discouraged.

RECOMMENDATIONS FOR STATE LAW

Under existing state marihuana laws, cultivation distribution and possession with intent to distribute are generally felonies and in most states possession for personal use is a misdemeanor. The Commission strongly recommends uniformity of state laws and, in this regard, endorses the basic premise of the Uniform Controlled Substances Act drafted by the National Conference of Commissioners on Uniform State Laws. The following are our recommendations for a uniform statutory scheme for marihuana, by which we mean, as under existing federal law, only the natural cannabis plant and its various parts, not the synthetic tetrahydrocannabinol (THC)

Existing Law

CULTIVATION, SALE OR DISTRIBUTION FOR PROFIT AND POSSESSION WITH INTENT TO SELL WOULD REMAIN FELONIES (ALTHOUGH WE DO RECOMMEND UNIFORM PENALTIES).

Private Activities

POSSESSION IN PRIVATE OF MARIHUANA FOR PERSONAL USE WOULD NO LONGER BE AN OFFENSE.

DISTRIBUTION IN PRIVATE OF SMALL AMOUNTS OF MARIHUANA FOR NO REMUNERATION OR INSIGNIFICANT REMUNERATION NOT INVOLVING A PROFIT WOULD NO LONGER BE AN OFFENSE.

Public Activities

POSSESSION IN PUBLIC OF ONE OUNCE OR UNDER OF MARIHUANA WOULD NOT BE AN OFFENSE, BUT THE MARIHUANA WOULD BE CONTRABAND SUBJECT TO SUMMARY SEIZURE AND FORFEITURE.

POSSESSION IN PUBLIC OF MORE THAN ONE OUNCE OF MARIHUANA WOULD BE A CRIMINAL OFFENSE PUNISHABLE BY A FINE OF $100.

DISTRIBUTION IN PUBLIC OF SMALL AMOUNTS OF MARIHUANA FOR NO REMUNERATION OR INSIGNIFICANT REMUNERATION NOT INVOLVING A PROFIT WOULD BE A CRIMINAL OFFENSE PUNISHABLE BY A FINE OF $100.

PUBLIC USE OF MARIHUANA WOULD BE A CRIMINAL OFFENSE PUNISHABLE BY A FINE OF $100.

DISORDERLY CONDUCT ASSOCIATED WITH PUBLIC USE OF OR INTOXICATION BY MARIHUANA WOULD BE A MISDEMEANOR PUNISHABLE BY UP TO 60 DAYS IN JAIL, A FINE OF $100, OR BOTH.

OPERATING A VEHICLE OR DANGEROUS INSTRUMENT WHILE UNDER THE INFLUENCE OF MARIHUANA WOULD BE A MISDEMEANOR PUNISHABLE BY UP TO ONE YEAR IN JAIL, A FINE OF UP TO $1,000, OR BOTH, AND SUSPENSION OF A PERMIT TO OPERATE SUCH A VEHICLE OR INSTRUMENT FOR UP TO 180 DAYS.

A PLEA OF MARIHUANA INTOXICATION SHALL NOT BE A DEFENSE TO ANY CRIMINAL ACT COMMITTED UNDER ITS INFLUENCE NOR SHALL PROOF OF SUCH INTOXICATION CONSTITUTE A NEGATION OF SPECIFIC INTENT.

A PERSON WOULD BE ABSOLUTELY LIABLE IN CIVIL COURT FOR ANY DAMAGE TO PERSON OR PROPERTY WHICH HE CAUSED WHILE UNDER THE INFLUENCE OF THE DRUG.

DISCUSSION OF FEDERAL RECOMMENDATIONS

The recommended federal approach is really a restatement of existing federal policy. From official testimony and record evaluation, we know that the federal law enforcement authorities, principally the Federal Bureau of Narcotics and Dangerous Drugs and the Bureau of Customs, do not concentrate their efforts on personal possession cases. The avowed purpose of both Bureaus is to eliminate major traffickers and sources of supply. For the most part, the federal agencies have left possession enforcement to the states. Underlying this approach is a need -to maximize the use of enforcement resources for major priorities and allow the states, in exercising their "police powers," to assume the responsibility for local activities, including possession for personal use.

By withdrawing the criminal sanction from possession for personal use we are, in effect, codifying official policy. In addition, such a scheme follows the model chosen for alcohol in the Volstead Act, and also revives the approach taken by Congress in the Drug Abuse Control Amendments (DACA) of 1965. We are in agreement with the original thrust of DACA, when Congress brought previously uncontrolled drugs, LSD, barbiturates and amphetamines, under control but did not assess criminal penalties for possession for personal use.

Instead, Congress placed on the prosecution the burden of proof that the possession was for purposes of sale. Regardless of whether or not Congress was wise in imposing a penalty in 1968 for possession for personal use, a subject we will consider in our next Report, we think the original DACA concept is enlightened where marihuana is concerned.

At the same time, present federal law classifies marihuana as contraband, and this feature should be maintained. The contraband concept serves the discouragement policy in two ways: it assists the removal of supply from the market and it symbolizes a continuing societal opposition to use. Accordingly, if a person is found in possession of marihuana in public and the government is unable to prove any intent to sell, it may nevertheless seize the marihuana and confiscate it is contraband.

The contraband provision would apply only to possession in public and would not extend to possession for personal use in the home. During Prohibition, the Federal Government and most of the states employed a similar statutory limitation. For example, the Volstead Act provided that a private dwelling could not be searched "unless it is being used for the unlawful sale of intoxicating liquor. . . ." 1 The impact of this contraband concept is that marihuana possessed or found in public can be summarily seized by law enforcement officials and forfeited to the state for subsequent destruction .2 The criminal justice system is not involved in the process. The individual receives no record of any kind; he simply loses the economic value of the marihuana.3

With regard to the casual distribution of small amounts of Marihuana for no remuneration or insignificant remuneration not involving a profit we are following the approach taken in the Comprehensive Drug Abuse Prevention and Control Act of 1970 which in essence treats such casual transfers as the functional equivalent of possession. In doing so, Congress recognized that marihuana is generally shared among friends and that not all people who distribute marihuana are "Pushers."*

'§ 39. Unlawful POssessior of liquor or property designed for manufacture thereof ; search warrants. It shall be unlawful to have or possess any liquor or property designed for the manufacture of liquor intended for use in violating this chapter or which has been so used,

and no property rights shall exist in any such liquor or property. A search warrant may issue as provided in [sections 611 to 631 and 633 of Title 181 and such liquor, the containers thereof, and such property so seized shall be subject to such disposition as the court may make thereof, if it is found that such liquor or property was so unlawfully held or possessed, or had been so unlawfully used, the liquor, and all property designed for the unlawful manufacture of liquor, shall be destroyed, unless the court shall otherwise order. No search warrant shall issue to search any private dwelling occupied as such unless it is being used for unlawful sale of intoxicating liquor, or unless it is in part used for some business purpose such as a store, shop, saloon, restaurant, hotel, or boarding 'house. 'Me term "private dwelling" shall be construed to include the room or rooms used and occupied not transiently but solely as a residence in an apartment house, hotel or boarding house. The property seized on any such warrant shall not lie taken from the officer seizing the same on any writ of replevin or other like process. (Oct. 28, 1919, e. 85, Title 11, § 25, 41 Stat. 315)

The federal and state provisions presently in force regarding the seizure and forfeiture of an automobile transporting marihuana would no longer be applicable. They would still remain in force for other controlled drugs classified as contraband.

3 See the views of Commissioners Rogers, Carter, Ware, Hughes and Javits expressed in the footnote on pages 151-156.

The accuracy of Congress' appraisal is underscored by the National Survey. When people who had used marihuana were asked how they first obtained the drug, 61% of the adults and 76% of the youth responded that it had been given to them. Only 4% of the adults and 8% of the youth said that they had bought it. When asked who their source had been, 67% of the adults and 85% of the youth responded that it had been a friend, acquaintance or family member.

The close association between the concepts of casual transfer and personal possession is also underscored by the fact that 56% of the prosecutors in our survey thought that the present law did not deter casual transfer at all or deterred it only minimally.

With regard to importation and exportation, we recommend no change in existing law and make the following observations. First, the United States must maintain its international standing and, as a member of the community of nations, this country should do everything in its power to restrict the exportation of marihuana to other countries and to penalize such international traffic.

As to importation of marihuana, the most effective way to discourage use is to cut off supply at the top of the pyramid. Recognizing that most of the marihuana consumed in the United States comes from abroad, we feel that the Bureau of Customs at the borders should have all necessary authority to halt and interdict supplies intended for consumption in this country. There has been a long-standing practice of excepting ports and borders from procedural rules applying within the United States. One example is that Customs officials are allowed to search without the showing of probable cause, even though such a showing is mandatory for searches conducted within the United States. We can see a legitimate reason for continuing this policy.

*In considering this relationship, the Senate, in the Report of the Committee on the Judiciary of the United States Senate regarding S. 3246 (a precursor bill to the new Federal law) stated:

The language "distributes a small amount of marihuana for no remuneration or insignificant remuneration not involving a profit" as contained in section 501 (c) (4) is intended to cover the type of situation where a college student makes a quasi-donative transfer of one or two marihuana cigarettes and receives 50 cents or a dollar in exchange to cover the cost of the marihuana.

Transfers of larger quantities in exchange for larger amounts of money, or transfers for profit are not intended to be covered by this section, but rather are to be covered by section 501 (c) (2) which deals with unlawful distribution. This language sketches a prototype situation which the Committee had in mind; however, the wording of the Federal Act and of our recommendations is not intended to establish inflexible rules. The objective in both provisions is to distinguish between commercial sellers and casual distributors. Ultimately the courts will have the responsibility of drawing this distinction according to the evidence in individual cases. The recommended provision intentionally establishes a loose standard not tied to specific amounts of marihuana or money.

See also the views of Commissioners Rogers, Carter, Ware, Hughes and Javits expressed in the footnote on pages 151-156.

DISCUSSION OF STATE RECOMMENDATIONS

The states have primary responsibility for enforcing the existing proscriptions against possession for personal use. Their present efforts are designed mainly to keep marihuana use contained, and in private. Such an enforcement policy is consistent with our social policy approach, and is an appropriate exercise of the states' obligations to maintain public order. So while we see no need for criminal sanctions against possession for personal use or against casual transfers, we recommend a number of provisions for confining marihuana use to the home.

The first point is that even marihuana possessed for personal use is subject to summary seizure and forfeiture if it is found in public. This concept is now applicable under federal law which we commend also to the states. In our view, the contraband feature symbolizes the discouragement policy and will exert a major force in keeping use private.

Another means of symbolizing the discouragement policy which has been suggested is the imposition of a civil fine on those possessing marihuana outside the home for personal use.* Under such an approach, a fine would be levied and processed outside the criminal justice system. Essentially, possession of marihuana would be the equivalent of a traffic offense in those jurisdictions where such an offense is not criminal.

Such a scheme would accomplish little more than that achieved under a partial prohibition scheme. Warrants would presumably not be issued for searches of private residences, and possession offenses would be detected only by accident or if the offender uses the drug in public. The more direct way to confront such behavior is a penalty against public use.

A further problem with the civil fine approach lies in the area of non-payment of the fine. With traffic tickets, or with civil fines levied against industrial polluters, society can compel compliance by withdrawing its permission to engage in regulated activity. For example, it can revoke the motorists' license to drive or the polluters' license to do business within the state. In short, the state has remedies beyond the criminal law to achieve its policy goal. The same would not be true for the marihuana user and enforceability of the statute would

ultimately require court action.

*See the views of Commissioners Rogers, Carter and Ware expressed in the footnote on pages 151-153.

As we have suggested, a central feature, of our statutory approach at the state, level would be a vigorously enforced prohibition of public use. No intoxicant should be used in public, both because it may offend others and because the user is risking irresponsible behavior if he should be under its influence in public. Moreover, where marihuana is concerned, continuing societal disapproval requires that the behavior occur only in private if at all. Public use, under the proposed scheme, would therefore be punishable by a fine of $100.

We also recognize the need for some prophylactic measure for anticipating distribution, even though there may be no intent to sell for profit. To this end, and in order to deter public use, possession and transfer, we have drawn a line at one ounce of marihuana. Possession in public of more than this amount would be punishable by a fine of $100.

For these same reasons, we believe the states should prohibit all transfers outside the home, whether or not for remuneration. A transfer for profit would be a felony, as under present law. A casual transfer of a small amount would be punishable by a fine of $100.

Taken together, the contraband feature, the proscriptions of public use and public possession of more than an ounce (even if for personal use) and the prohibition of public transfers will reflect the discouragement policy underlying the entire, scheme.

The remaining set of recommendations aims at irresponsible behavior under the influence of marihuana. Whatever the precise legal scheme employed, these provisions should be included.

First, the "drunk and disorderly" statutes presently in force in the states are useful tools for maintaining public order. We would suggest similar statutes in the case of marihuana, punishing offenders by up to 60 days in jail, a fine of $100, or both. Law enforcement authorities must have a means to halt antisocial behavior exhibited incidental to marihuana use.

The second aspect of irresponsible behavior is the operation of automobiles, other vehicles, or any potentially dangerous instrument while under the influence of marihuana. Such behavior is gross negligence in itself, risking harm to others unnecessarily. In addition to penalizing a person who "drives under the influence" as a serious misdemeanant, we would impose absolute civil liability on anyone who harms the person or property of another while under the influence of marihuana.

Finally, no one should be able to limit his criminal accountability by alleging that he was under the influence of marihuana at the time of the crime. Under both federal and state law, the defendant should not be able to negate the mental element of "specific intent," which some offenses carry, by pleading that he was under the influence of marihuana and was therefore unable to have formed such an intent. Unlike many users of heroin, the user of marihuana is not physically dependent on the drug. The use of the drug is usually a matter of choice. Although we believe on the basis of available evidence that there is no causal connection between marihauna use and crime, we would under no circumstances allow a person to escape the consequences of his actions by hiding behind the cloak of marihuana use.

DISCUSSION OF POTENTIAL OBJECTIONS

Having discussed our recommended scheme at the federal and state levels, we think it useful to answer some objections we anticipate will be raised. Possible objections are:

1. Partial prohibition is not a sufficient reflection of the discouragement policy.

2. Partial prohibition is logically inconsistent.

3. A possession penalty is necessary for effective enforcement of sale proscriptions.

4. Partial prohibition won't "work" for marihuana any more than it did for alcohol.

5. A possession offense is essential as a device for detecting problem users.

6. Retention of a possession offense is required by our international obligations.

7. A firm distinction should be drawn between less potent and more potent preparations.

1. The Partial Prohibition Approach Is a Sufficient Reflection of the Discouragement Policy

To those who would argue that a criminal sanction against use is a necessary implementation of an abstentionist policy, we need only respond that this country has not generally operated on that assumption. We would be astounded if any person who lived during the 1920's was not aware of a definite governmental policy opposed to the use of alcohol. Yet, only five states prohibited possession for personal use during Prohibition. The failure of the 18th Amendment, the Volstead Act and 43 state prohibition acts to criminalize private possession certainly did not signify official approval of or neutrality toward alcohol use.

As we pointed out in Chapter 1, our nation has not generally seen fit to criminalize private drug-related behavior; only in the narcotics area was possession made a crime and marihuana was brought within the narcotics framework because of unfounded assumptions about its ill effects. We think it is time to correct that mistaken departure from tradition with respect to marihuana. As during Prohibition, the drug will remain contraband, and its distribution will be prohibited.

Even as late as 1965, an abstentionist drug policy was not thought to require prohibition for personal use. At that time, Congress enacted the Drug Abuse Control Amendments, bringing LSD, amphetamines and barbiturates under federal control. National policy was clearly opposed to use of the hallucinogens and the non-prescription use of amphetamines and barbiturates, yet Congress did not impose a penalty for possession. Whether or not Congress' subsequent decision in 1968, to impose such a penalty was appropriate is an issue we will cover in our next Report after analyzing the individual drugs controlled. The important point now is that such a penalty is not a necessary feature of a discouragement policy for marihuana, regardless of its, propriety for other drugs.

1. The Partial Prohibition Approach Is Not Logically Inconsistent

It will. be, argued that a law which permits a person to acquire and use marihuana but does not permit anyone to sell it to him for profit is logically unsound. We do not agree. If we had recommended a social policy of approval or neutrality toward use, partial prohibition would indeed have been illogical. However, under a discouragement policy, such a, scheme is perfectly consistent.

Under partial prohibition, use is discouraged in three main ways. First, law enforcement authorities will make a concerted effort to reduce the supply of the drug. If a person wishes to use marihuana, he will have to seek out a person to sell it to him; and if his seller is in the business of distributing marihuana for profit, the seller is violating the law.

Second, the user will have to confine his disapproved behavior to the home. If lie uses the drug in public, he has committed an offense; if lie possesses it in public. it may be summarily seized as contraband.

Third, continuing efforts will be made by educators, public health officials, and official government spokesmen to discourage use. Realizing that educational efforts are not always successful, we would hope for a sound program. In any event, the law should be an ancillary rather than a focal consideration.

There is nothing theoretically Inconsistent about a scheme which merely withdraws the criminal sanction from a behavior which is not immoral but which is disapproved. The individual is being allowed to make his own choice. Hopefully, he will choose not to use marihuana. If he chooses to do so, however, he will have to do so discreetly and in private. Apart from its ultimate possession by the user, however, all marihuana-related activity is prohibited. The drug is contraband from its initial growth, through its harvest and distribution. It ceases to be contraband only when possessed and used in the home.

3. Prohibition of All Possession Is Not Essential to Prohibition of Sale

The other side of the "inconsistency" objection is the argument by law enforcement officials that they cannot adequately enforce proscriptions against sale without a possession penalty. We disagree. We have already explained that enforcement of a possession offense to some extent impedes the effort to reduce supply. Possession cases are generally regarded in the law enforcement community and by judges and prosecutors as "cheap" cases. Few seriously contend that prosecution of possessors reduces supply.

Some persons argue in response that the law should remain on the books as a tool not against the possessor but against the seller. They say that a possession offense is helpful in three ways. First, a prosecution can be used as a bargaining tool to encourage the possessor to reveal his source; this is called "turning an informant." Second, the police may know that a person is a seller, but may not be able to prove either sale or intent to sell, so they can at least charge such suspected sellers with simple possession.

Third, a corollary of the second argument is that the possession offense provides a useful tool in the "plea bargaining" process. That is, a seller may plead guilty to the lesser offense of possession, now generally a misdemeanor, instead of running the risk of trial and conviction of the more serious offense of sale, generally a felony. The prosecution may accept such a "bargain' if it is uncertain of the strength of the case, to avoid delay in

sentencing, to reduce judicial backlog or in return for information from the defendant.

From an institutional standpoint, we do not find these arguments persuasive. First, if a possession offense is on the books, possession is a criminal activity. We oppose criminalizing conduct when its purpose and intent is directed not toward that conduct but toward another behavior.

In answer to the informant argument, the marihuana user (and this may not be true of other drugs) is simply too low in the distributional chain to help very much. As indicated earlier, the National Survey shows most users receive their marihuana from their friends or acquaintances either as a gift or at cost. Rarely is the time spent on him or on his "source" a fruitful allocation of the law enforcement official's time. Also, it is institutionally improper to hold the criminal sanction over a person to force him to talk, when we otherwise would be unwilling to use that sanction.

As to the "lack of proof" and "plea bargaining" arguments, we believe they challenge a fundamental tenet of our criminal justice system. That is, under our law, a person is not guilty just because the police think he is guilty; his offense must be proven beyond a reasonable doubt to a judge or jury. If a possession offense were not on the books, the police would have to gather enough evidence to convict the seller of sale or of possession with intent to sell, and the prosecution would have to convince the judge beyond a reasonable doubt. The defendant, suspected seller or not, is entitled to due process of law.

The "lack of proof" argument is nothing more than a plea for an "easy out" when the police do not have enough evidence. This simply represents an admission that law enforcement officials want a possession offense which they can apply selectively, to people whom they think, but cannot prove, are sellers. Such a notion is inconsistent with the basic premise of our system of equal treatment under the law. If "simple" possession is not an offense for some, it is not an offense for all. A "known seller" is entitled to the same rights as anyone else: criminal conduct must be proved beyond a reasonable doubt. We do not favor coddling criminals. We do insist, as did the framers of the Constitution, that suspected criminal behavior be proved.

4. That Partial Prohibition Did Not "Work" For Alcohol Doesn't Mean It Won't For Marihuana

Prohibition failed to achieve its avowed purpose of eliminating the use of intoxicating liquors from American life. Risking an oversimplification, we think two reasons were essentially responsible for this failure: the unwillingness of a substantial minority, and probably a majority, of the American public to discard a habit deeply ingrained in their lives; and the inability of the law enforcement community to eliminate the bootlegging traffic which catered to this continuing demand.

As we have repeatedly noted, one of the reasons for adoption of a partial prohibition approach is uncertainty about the extent to which marihuana use is ingrained in American culture. Indeed, adoption of partial prohibition is the best way to find out for sure. If the social interest turns out to be only transient, this policy will prove particularly appropriate.

Similarly, an increase in marihuana use may be prevented by a concerted effort to eliminate major trafficking, the scope of which is presently only a small fraction of Prohibition bootlegging. We do not pretend that supply of a plant so easily grown can be eliminated. However, an intensive effort to eliminate commercial criminal enterprise should have some

impact on the extent of use.

5. The Possession Offense Is Not Required as a Detection Device

In addition to their deterrent and symbolic functions, the drug possession laws serve a third function not shared by most other criminal laws. Like laws against public drunkenness, they facilitate societal detection of drug-dependent persons. Ideally, such persons, although apprehended by law enforcement authorities, may be detained for purposes of treatment and rehabilitation.

Whatever the merits of such an argument for the opiates and alcohol, such an argument does not apply to marihuana. Only a very small percentage of marihuana users are drug-dependent or are in need of treatment. Their dependence is generally upon multiple drug use, not on marihuana. In any event, the existence of such a small population does not justify retention of the possession offense as a detection device.

6. International Obligations Do Not Require Maintenance of a Possession Penalty

Some have raised the possibility that removal of simple possession criminal penalties would contravene this country's obligations under the Single Convention on Narcotic Drugs (1961), to which it became a signatory in March, 1967. We do not believe the provisions of that Convention compel the criminalization of possession for personal use.

Nowhere in the Convention are its Parties expressly required to impose criminal sanctions on possession for personal use. Article 4 requires Parties to "take such legislative and administrative measures as may be necessary . . . . to limit exclusively to medical and scientific purposes the production, manufacture, export, import, distribution of, trade in, use and possession of drugs." Penal sanctions are not necessarily included in this formulation.

Article 36, which deals specifically with penal provisions, requires each party to adopt "such measures as will ensure" that the listed activities, including possession, "shall be punishable offenses." Some have argued that this provision requires prohibition of personal use.

However, from a comprehensive study of the history of the Convention, the Commission has concluded that the word "possession" in Article 36 refers not to possession for personal use, but to possession as a link in illicit trafficking. This interpretation is bolstered also by the failure to include "use" in Article 36 even though it has been included in Article 4.

Finally, we must consider Article 33, which provides that "the Parties shall not permit the possession of drugs except under legal authority." This Article also does not require the imposition of any sanctions on possession for personal use. Experts consulted by the Commission have indicated that this Article may, nevertheless, require that the Parties to limit possession and use to medical and scientific purposes. To affirmatively allow drugs to remain in the possession of persons for non-medical use would in this view contravene Articles 4 and 33 to read together. From this perspective our international obligations may require the classification of marihuana, as contraband. For this reason, together with a desire to symbolize our discouragement policy in a clear way, we have included the contraband feature in our legal implementation scheme.

In conclusion, our reading of the Convention is that a Party may legitimately decide to deal with non-medical use and possession of marihuana through an educational program and similar approaches designed to discourage use.

". No Potency Distinction is Necessary at the Present Time

Following the approach taken in the Comprehensive Drug Abuse Prevention and Control Act of 1970, we have drawn a line between the natural cannabis plant and the synthetic tetrahydrocannabinols. "Marihuana" is defined as any and all parts of the natural plant. That we choose this approach for purposes of statutory implementation does not mean that we are unaware of the difference between the less potent and more potent preparations of the natural plant.

As noted in Chapters II and III, the highest risk of cannabis use to the individual and society arises from the very long-term, very heavy use of potent preparations commonly called hashish. No such pattern of use is known to exist in the United States today.

The predominant pattern of use in the United States is experimental or intermittent use of less potent preparations of the drug. Even when hashish is used, the predominant pattern remains the same. In addition, whatever the potency of the drug used, individuals tend to smoke only the amount necessary to achieve the desired drug effect.

Given the prevailing patterns of use, the Commission does not believe it is essential to distinguish by statute between less potent and more potent forms of the natural plant. Reinforcing this judgment are the procedural and practical problems attending an effort to do so.

If the criminal liability of ail individual user is dependent on the THC content of tl substance, neither lie nor the arresting officer will know whether he has committed a crime until an accurate scientific determination is made. Even if such accurate determinations were feasible on a large scale, which is not now the case, such after-the-fact liability is foreign to our criminal laws.

Under present circumstances, then, a statutory line based on potency is neither necessary nor feasible. We emphasize also that any legal distinction is an artificial reflection of the Commission's major concern: the heavy use of the drug over a long term. The most emphatic element of official policy should be to discourage such use, especially of the more potent preparations. Unfortunately precise legislative formulations regarding the amount of the drug presumed to be for personal use do not assist this effort at all. Whether it is lawful to possess one ounce of hashish or a proportionate amount based on potency (for example, one-fourth ounce), an individual prone to use the drug heavily will do so. Society's resources should be committed to the task of reducing supply of the drug and persuading our citizens not to use it. Expenditure of police time and financial resources in an attempt to ascertain the THC content of every seized substance would make little, if any, contribution to this effort.

A Final Comment

In this Chapter, we have carefully considered the spectrum of social and legal policy alternatives. On the basis of our findings, discussed in previous Chapters, we have concluded that society should seek to discourage use, while concentrating its attention on

the prevention and treatment of heavy and very heavy use. The Commission feels that the criminalization of possession of marihuana for personal is socially self-defeating as a means of achieving this objective. We have attempted to balance individual freedom on one hand and the obligation of the state to consider the wider social good on the other. We believe our recommended scheme will permit society to exercise its control and influence in ways most useful and efficient, meanwhile reserving to the individual American his sense of privacy, his sense of individuality, and, within the context of all interacting and interdependent society, his options to select his own life style, values, goals and opportunities.

The Commission sincerely hopes that the tone of cautious restraint sounded in this Report will be perpetuated in the debate which will follow it. For those who feel we have not proceeded far enough, we are reminded of Thomas Jefferson's advice to George Washington that "Delay is preferable to error." For those who argue we have gone too far, we note Roscoe Pound's statement, "The law must be stable, but it must not stand still."

We have carefully analyzed the interrelationship between marihuana the drug, marihuana use as a behavior, and marihuana as a social problem. Recognizing the extensive degree of misinformation about marihuana as a drug, we have tried to demythologize it. Viewing the use of marihuana in its wider social context, we have tried to desymbolize it.

Considering the range of social concerns in contemporary America, marihuana does not, in our considered judgment, rank very high. We would deemphasize marihuana as a problem.

The existing social and legal policy is out of proportion to the individual and social harm engendered by the use of the drug. To replace it, we have attempted to design a suitable social policy, which we believe is fair, cautious and attuned to the social realities of our time.

The Report of the National Commission on Marihuana and Drug Abuse

Marihuana: A Signal of Misunderstanding

Commissioned by President Richard M. Nixon, March, 1972

addendum

The previous Chapter recommended a social policy oriented toward the discouragement of marihuana use and presented a set of proposals for the legal implementation of that policy. In addition to these legal recommendations for federal, and state action, the Commission believes certain other recommendations should be presented for action.

Ancillary Recommendations

These recommendations are pr sented in three categories: (1) legal and law enforcement, (2) medical, and (3) other. Some of these recommendations apply to other drugs as well and will be discussed further in our second Report. However, we consider it useful to make recommendations now so that policy planners can be informed of the implications of what has been studied to date.

Foremost among the Commission's conclusions is a need for consistency between federal and state laws affecting marihuana distribution and use, and uniformity of marihuana laws among the states. The administration of all marihuana laws must be mutally reenforcing so that total governmental response to marihuana is both equitable and understandable.

Legal and Law Enforcement Recommendations

1. Federal

RECOMMENDATION: FEDERAL LAW ENFORCEMENT AGENCIES, ESPECIALLY THE BUREAU OF NARCOTICS AND DANGEROUS DRUGS AND THE BUREAU OF CUSTOMS, SHOULD IMPROVE THEIR STATISTICAL REPORTING SYSTEMS SO THAT POLICIES MAY BE PLANNED AND RESOURCES ALLOCATED ON THE BASIS OF ACCURATE AND COMPREHENSIVE INFORMATION.

In an effort to obtain information relating to enforcement of the marihuana laws including arrest, prosecution, sentencing and conviction data, the Commission found that sufficient information was available about prosecution and court action, but not about the activities of the law enforcement agencies. We were confronted by and large with inadequate statistical information and little or no in-depth evaluation.

The statistical reporting procedures of the Bureau of Narcotics and Dangerous Drugs and

the Bureau of Customs are not uniform, making it extremely difficult to assess the effectiveness of the two principal drug enforcement agencies of the Federal Government. The Bureau of Narcotics and Dangerous Drugs keeps centralized files but the Bureau of Customs maintains its files on a regional basis. In both Bureaus, statistical information is kept only in its raw form; that is, number of arrests, number of seizures and so on. Very little analysis exists of the procedures leading to arrest, of the characteristics of persons arrested, and of the law enforcement strategies involved in the arrest. For law enforcement personnel to understand more fully how they are carrying out their functions so that internal assessments of particular policies can be made, sophisticated statistics must be maintained.

Both the Bureau of Narcotics and Dangerous Drugs and the Bureau of Customs are aware of these problems. Both were extremely helpful to the Commission and its research staff in seeking useful information from the mass of raw statistics. However, the information from the available statistics is incomplete and of limited utility for policy planning purposes.

In support of this priority recommendation, Congress is urged to provide additional and adequate funding for this area, at the same time requiring both agencies to utilize a common reporting system so that information can be more easily shared between them.

In addition, it is recommended that the Federal Bureau of Investigation, in its Uniform Crime Reports, requests the state agencies to identify marihuana cases separately from narcotic cases and report them as a separate component.

RECOMMENDATION: THE FEDERAL BUREAU OF NARCOTICS AND DANGEROUS DRUGS SHOULD INCREASE ITS TRAINING PROGRAMS OF STATE AND LOCAL POLICE WITH SPECIAL EMPHASIS ON THE TRAINING IN THE DETECTION OF TRAFFICKING CASES.

The Commission's interviews with state and local police, officials revealed a consistent desire to upgrade the quality of their investigations. Since the Federal Bureau of Narcotics and Dangerous Drugs, through its National Training Institute, has been performing this task well, it is recommended that the funds be granted by the Congress to extend the range of the educational program offered and increase the number of persons trained.

RECOMMENDATION: INCREASED BORDER SURVEILLANCE, A TIGHTENING OF BORDER PROCEDURES, AND A REALISTIC ERADICATION PROGRAM TO DIMINISH THE SUPPLY OF DRUGS COMING INTO THE COUNTRY, COUPLED WITH A MORE EFFECTIVE PROGRAM FOR DIMINISHING THE DOMESTIC PRODUCTION AND DISTRIBUTION OF MARIHUANA, ARE REQUIRED.

The Commission, as part of its mandate, studied drug trafficking patterns along the borders of the United States. An analysis of border marihuana seizures was also made. The results of both studies indicated that proportionately larger seizures were made along the borders at locations where, there were no manned checkpoints. The Commission therefore recommends that more vigorous effort be made by federal agencies to interdict smugglers along the entire border while continuing their efforts at the formal checkpoints.

In discussions with representatives of other countries, a common observation made by foreign officials has been this country's somewhat indifferent attitude about the eradication of our home-grown marihuana, an attitude that is not appreciated by other countries wider pressure from the United States to destroy their crops. Since this Administration has wisely made illicit trafficking in all drugs a foreign policy priority, we recommend that priority be supported by an equally assiduous effort to eradicate marihuana within our borders.

We recommend further that preclearance procedures be eliminated so that Customs personnel may more effectively control smuggling of marihuana and other drugs. Preclearance is a procedure whereby passengers and their baggage destined for the United States are inspected by U.S. Customs, Immigration and Agriculture officials prior to departure from a foreign location. This practice is in effect in Bermuda, Montreal, Nassau, Toronto, Vancouver, Winnipeg and the Virgin Islands. Other locations are petitioning for the same privilege.

An inherent weakness in the preclearance procedure is that Customs personnel stationed outside the United States have no authority for search, seizure and arrest. This fact is well-known to the professional smuggler who uses it to his advantage. Since we have been informed that preclearance creates a gap in Customs' interdiction process, reason dictates that the procedure be eliminated in the interest of tighter control.

H. State

RECOMMENDATION: ALL STATES SHOULD ADOPT THE UNIFORM CONTROLLED SUBSTANCES ACT TO ACHIEVE UNIFORMITY WITH REGARD TO MARIHUANA AND OTHER DRUG LAWS, WITH THE EXCEPTION THAT THE LEGAL RESPONSE TO POSSESSION FOR ONE'S OWN USE BE UNIFORMLY ADOPTED IN ACCORDANCE WITH OUR RECOMMENDATION IN CHAPTER V OF THIS REPORT.

As noted earlier, one of the greatest needs in the entire drug area is uniformity of state laws with regard to structure and penalties. While this recommendation applies to all drugs and not just marihuana, we feel it essential to make this recommendation now to help deemphasize the marihuana problem. Significant differences in penalties among the states constitute a valid source of irritation and conflict among various segments of our population. In an age of high mobility, it is unconscionable that penalties should vary so greatly in response, to the same behavior.

RECOMMENDATION: EACH STATE SHOULD ESTABLISH A CENTRALIZED COMPULSORY REPORTING AND RECORD-KEEPTNG AUTHORITY SO THAT ADEQUATE AND ACCURATE STATISTICS OF ARRESTS, SENTENCES AND CONVICTIONS ON A STATEWIDE BASIS ARE AVAILABLE.

Several states have systems for maintaining records of drug arrests on a statewide basis. Accurate reporting and compilation of these cases permit the state to assess accurately the impact of law enforcement on drug offenders. The Law Enforcement Assistance Administration of the Department of Justice should assist the states to establish compulsory statistical reporting centers so that individual state needs are met and a clearer picture of the national trends can be, ascertained. Efficient state record-keeping will have an additional benefit of increasing the reliability of the Uniform Crime Reports compiled by the Federal Bureau of Investigation.

RECOMMENDATION: THOSE STATES REQUIRING PHYSICIANS TO REPORT DRUG USERS SEEKING MEDICAL ASSISTANCE SHOULD CHANGE SUCH REQUIREMENTS TO INSURE THE CONFIDENTIALITY OF THE DRUG USER'S IDENTITY, SO THAT PERSONS NEEDING MEDICAL HELP WILL FEEL FREE TO SEEK IT.

Seventeen states* currently require physicians to report to a government agency information on those persons treated by them who are dependent on, or are habitual users of drugs. No common pattern emerges among these states.

*California, Connecticut, Hawaii, Idaho, Iowa, Massachusetts, Michigan, Montana, Nebraska, New Jersey, New Mexico, New York, North Carolina, Pennsylvania, Vermont, Virginia, Washington.

After reviewing these statutes, the Commission believes that the disadvantages of maintaining such reporting systems outweigh the benefits to society or the individual. Fear of disclosure to the police discourages many persons front seeking needed medical help. Furthermore, the requirement makes the physician an informant and an agent of law enforcement.

While a need exists for reliable statistics regarding the number and nature of those persons being treated, the Commission does not feel that identification of the individual user is necessary. We again emphasize that society should encourage persons in need of medical attention to seek out authorized practitioners wit'.out having to fear legal repercussions for such action.

III. International

RECOMMENDATION: IF THE UNITED STATES SHOULD BECOME A SIGNATORY OF THE PROPOSED PSYCHOTROPIC CONVENTION, WE RECOMMEND THAT CANNABIS BE REMOVED FROM THE EXISTING SINGLE CONVENTION AND CONSIDERATION BE GIVEN TO LISTING IT IN THE PSYCHOTROPIC CONVENTION AMONG DRUGS WHICH HAVE SIMILAR EFFECTS.

Under the Single Convention on Narcotic Drugs, 1961, of which the United States became a signatory in 1967, cannabis, with the exception of its leaves and stems, is included with narcotic drugs and cocaine. While that categorization had some justification in 1961 when knowledge about marihuana was more, limited, this justification no longer exists. More importantly, tetrahydrocannabinol (THC), the psychoactive ingredient in cannabis, is not included in the Single Convention and is proposed for inclusion in the Psychotropic Convention.

The Commission sees little sense in having the potent psychoactive ingredient in cannabis covered in one Convention and the natural supplying data from its major foreign studies of chronic cannabis users in Jamaica and Greece. For medical research purposes, an analysis of data derived from populations in other countries with 10, 20 or 30 years of experience with heavy marihuana use will provide useful information about probable consequences if the, incidence of marihuana use in the United States were to continue and increase, and if more people engaged in heavy, long term use.

IV. Therapeutic Uses

RECOMMENDATION: INCREASED SUPPORT OF STUDIES WHICH EVALUATE THE EFFICACY OF MARIHIUANA TN THE TREATMENT OF PHYSICAL IMPAIRMENTS AND DISEASE IS RECOMMENDED.

Historical references have been noted throughout the literature referring to the use of cannabis products as therapeutically useful agents. Of particular significance for current research with controlled quality, quantity and therapeutic settings, would be investigations into the treatment of glaucoma, migraine, alcoholism and terminal cancer. The NIMH-FDA Psychotomimetic Advisory Committee's authorization of studies designed to explore the therapeutic uses of marihuana is commended.

V. Community-Based Treatment

RECOMMENDATION: COMMUNITY-BASED TREATMENT FACILITIES SHOULD BE PROMOTED IN CARING FOR PROBLEM DRUG USERS UTILIZING EXISTING HEALTH CENTERS W EN POSSIBLE AND APPROPRIATE.

In studying marihuana, the Commission has obtained information about a number of treatment centers and services. The wide range of agencies and the variety of goals and techniques present a confusing array of services available to drug users, varying widely in their effectiveness. Uniform criteria for evaluating the "success" of these programs is urgently needed.

The medical members of the Commission believe that some of the techniques being used may pose as much potential harm as good. Many young people who are experiencing profound difficulties resulting from the use of drugs may suppose they are being treated and helped, when in reality they are not. In some cases, the short-term benefit may be disruptive to the long-term welfare of the individual. In the rush to provide treatment facilities, many programs have been given impressive credentials without meeting minimal medical standards. It is essential that treatment facilities have, as their primary orientation, the well-being of the individual under treatment.

VI. Training Programs

RECOMMENDATION: PUBLIC HEALTH COURSES ON THE SOCIAL ASPECTS OF DRUG USE SHOULD BE INCLUDED IN THE CURRICULA OF THE SCHOOLS OF THE HEALTH PROFESSIONS.

The Commission recommends that schools of the health professions include in their curricula courses on the social, public health and therapeutic aspects of drug use as appropriate to the educational purpose of the individual school. The National Survey indicated that the public views the family pl sician as an important source of information about drugs. Next to school personnel, physicians were mentioned most often in this connection. Persons involved in the health professions must be provided with information about nonmedical as well as the medical aspects of drug use.

Other Recommendations

1. Reclassification of Cannabis

RECOMMENDATION: THE COMMISSION RECOGNIZES THAT SEVERAL STATE LEGISLATURES HAVE IMPROPERLY CLASSIFIED MARIHUANA AS A NARCOTIC, AND RECOMMENDS THAT THEY NOW REDEFINE MARIHUANA ACCORDING TO THE STANDARDS OF THE RECENTLY ADOPTED UNIFORM CONTROLLED SUBSTANCES LAW.

Scientific evidence has clearly demonstrated that marihuana is not a narcotic drug, and the law should properly reflect this fact. Congress so recognized in the Comprehensive Drug Abuse Prevention and Control Act of 1970, as did The Conference of Commissioners on Uniform State Laws in the Uniform Controlled Substances Law.

In those states where the Uniform Controlled Substances Law has not yet been adopted, twelve of which continue to classify marihuana as a "narcotic", the Commission recommends that the legislatures distinguish marihuana from the opiates and list it in a

separate category. The consequence of inappropriate definition is that the public continues to associate marihuana with the narcotics, such as heroin. The confusion resulting from this improper classification helps to perpetuate prejudices and misinformation about marihuana.

II. Information

RECOMMENDATION: A SINGLE FEDERAL AGENCY SOURCE SHOULD DISSEMINATE INFORMATION AND MATERIALS RELATING TO MARIHUANA AND OTHER DRUGS. THE NATIONAL CLEARINGHOUSE FOR DRUG ABUSE INFORMATION SHOULD BE CHARGED WITH THIS RESPONSIBILITY.

A great proliferation of drug information materials has occurred in recent years. These, materials are currently distributed by a number of federal agencies. Some of these materials conflict with each other. The result is a confusion and uncertainty on the part of the, public about the accuracy of all these statements. The public should have one federal source from which to obtain drug information. The National Clearinghouse for Drug Abuse Information appears best suited to perform this task.

III. Education

RECOMMENDATION: THE SPECIAL ACTION OFFICE FOR DRUG ABUSE PREVENTION IN THE WHITE HOUSE SHOULD BE RESPONSIBLE FOR THE COORDINATION, DEVELOPMENT AND CONTENT REVIEW OF ALL FEDERALLY-SUPPORTED DRUG EDUCATIONAL MATERIALS ANT) SHOULD ISSUE A REPORT AS SOON AS POSSIBLE, EVALUATING EXISTING DRUG EDUCATION MATERIALS.

The Commission has studied many programs of drug education throughout the country. Some are irrelevant, others are poorly designed, still others are misleading, and a good many of them are, of questionable value. A few are excellent. The Federal Government must provide assistance to the states and school districts in this matter, and should provide the leadership in developing sample programs in cooperation with educational systems. An evaluation of existing programs by The Special Action Office for Drug Abuse Prevention of the White House could be very helpful in improving the standards of drug education.

IV. Voluntary Sector Participation

RECOMMENDATION: THE COMMISSION NOTES THE SIGNIFICANT ROLE PLAYED BY THE VOLUNTARY SEC TOR OF THE AMERICAN COMMUNITY IN INFLUENCING THE SOCIAL, RELIGIOUS AND MORAL ATTITUDES OF OUR NATION'S CITIZENS AND RECOMMENDS THAT THE VOLUNTARY SECTOR BE ENCOURAGED TO TAKE AN ACTIVE ROLE IN SUPPORT OF OUR RECOMMENDED POLICY OF DISCOURAGING THE USE OF MARIHUANA.

Already very active in drug education and prevention activities, the social agencies, service clubs, church groups, and other non-governmental bodies have, been extremely helpful in attending to the difficult problems of drug abuse. The local and personal nature of such organizations gives them an advantage over state and federal governments in the development of attitudes by our citizens.

The policy which we here recommend, indeed any policy which might be recommended, will inevitably encounter widespread and earnest objections. The fullest efforts of all citizens of good will be required to attend to the, massive problem of drug abuse in a calm, just, responsibie and effective manner. The help of the voluntary agencies in working toward this

end is earnestly invited and urgently needed.

Dear fellow Rhode Islander:

Imagine what it might be like to have a devastating illness—one that not only puts you in incredible pain, but that gradually erodes you. ability to do most basic things like grocery shopping, reading a newspaper, or just walking across your living room. And imagine there is a medicine that could help, a medicine that the American Nurses Association has found "has a wide margin of safety for use under prescribed supervision, and it is effective for numerous conditions." Now imagine that you could be jailed if you use this medicine—marijuana. For me, and many other Rhode Island patients, this is our reality. **You can help change this situation by signing and mailing the enclosed postcard to Governor Donald Carcieri, asking him to support medical marijuana in Rhode Island.**

When I was a practicing nurse, I felt it was my duty to fight for my patients ... many of whom could not fight for themselves. **As one of the more than 350,000 Americans living with MS, I know that no patient should have to choose between going without a safe and effective medicine and risking arrest and imprisonment for using it.** There are currently two bills—S.B. 710 and H.B. 6052—before the Rhode Island House and Senate that would remove the threat of arrest for registered patients who use marijuana according to their practitioners' advice. My colleagues in Rhode Island are continuing the proud tradition of standing up for patients—the Rhode Island Nurses Association, and the Rhode Island Medical Society both vocally support these bills. But this legislation may not become law without your help.

More than half of all Rhode Island state legislators have cosponsored this legislation, so I am very hopeful that the issue will make it to the governor's desk. However, Gov. Carcieri has not yet taken a stand on the issue. So I am asking you to urge him to sign the legislation, or, at the very least, allow it to pass into law without his signature.

Please take a few minutes to sign the enclosed postcard to Gov. Carcieri, place a stamp on it, and drop it into the mailbox.

While your voice is crucial to this effort, it will be far from alone. **In addition to the nurses association and the state medical society, AIDS Project Rhode Island, the United Nurses and Allied Professionals, and the Rhode Island ACLU have also called for the state to remove criminal penalties for medical marijuana.** And 69% of Rhode Island voters support medical marijuana, according to a 2004 Zogby International poll. Nationally, the American Nurses Association, the American Public Health Association, the American Academy of Family Physicians, and the American Academy of HIV Medicine all have positions supporting medical marijuana.

With your help, we can finally make this legislation a reality. Signing and mailing the postcard will take only a minute, but it could be the card that turns these bills into law

Thank you for your time and compassion.

Very Truly Yours,

Rhonda O'Donnell, RN

P.S. Please send the enclosed slip in the envelope provided to the Marijuana Policy Project (MPP), which is working to protect patients from arrest in Rhode Island and in other states. By doing so, you can help MPP track how many people have contacted Gov. Carcieri and more effectively lobby the legislature.

II. Biological Effects of Marihuana

Botanical and Chemical Considerations

Cannabis sativa is one of man's oldest and most widely used drugs. The substance has been used in various ways as long as medical history has been recorded and is currently used as a multipurpose drug throughout the world (Adams, 1942; Adams, 1941-1942; Grinspoon, 1969; Indian Hemp, 1969; Walton, 1938).

During the past few years, a resurgence of the use of marihuana by western society, its increased importance as a social issue and the development of more precise compounds and analytic techniques have sparked dormant scientific interest in the substance. However, this effort has added little to what was already known about the clinical syndrome produced by cannabis (Hollister, 1971) and described by investigators during the last 100 years (Hollister, 1971; Beaudelaire, 1861; Moreau, 1845; Lewin, 1964; Indian Hemp, 1969; Mayor's Committee, 1944).

Strongly held, diametrically opposed opinions exist about whether the ultimate effects of cannabis use are harmful, harmless, or beneficial to human functioning (Pillard, 1970).

Despite these conflicting opinions, from a scientific perspective, the literature on marihuana is as clear, if not clearer, than for many other botanical substances consumed by man. Most of the older reports suffer from multiple scientific defects such as biased sampling, lack of adequate controls, unsophisticated techniques, and use of unstandardized marihuana of unknown potency. Nevertheless, much is known about the use of cannabis by man. Marihuana has a unique position in the multitude of pharmaceuticals in that human experimentation has been greater than laboratory animal experimentation.

The crucial experiments about social effects from chronic use will be settled by close observation of those who use the drug. The issues of potential therapeutic utility; mechanisms of mental function alteration; and the relationship to mental illness will require more extensive laboratory experimentation (Hollister, 1971).

Botanical and Chemical Considerations

In the past several years considerable progress has been made in adding to the understanding of marihuana as a complex drug containing botanical substance. Much important information has been obtained from intensive investigation of marihuana of worldwide origin cultivated under Government contract by the University of Mississippi (Doorenbos et al., 1971).

Marihuana is a preparation derived from the hemp plant, Cannabis sativa. This plant is an annual which either is cultivated or grows freely as a weed around the world, including most of the United States. When cultivated in temperate climates, plantings are made in May to June. The seeds germinate in less than a week, in moist soil. After thinning, the plants grow as rapidly as two feet a week during the peak growing season. They can reach a height of up to 18 feet at maturity, approximately three to five months after planting. Growth is greatly inhibited by inadequate light, water or soil nutrients.

Marihuana is produced by cutting the stem beneath the lowest branches, air drying, and stripping seeds, bracts, flowers, leaves and small stems from these plants. Stems and seeds are variably removed using a mesh screen producing manicured marihuana. Hashish is produced by scraping the thick resinous material secreted by the flowers (Doorenbos et al., 1971).

Many morphological variations in branching and leaf structure are observed among plants produced by different seed types. The characteristic leaf is palmately-compound and contains an odd number of coarsely serrated leaflets. Plants of a given seed type generally grow at similar rates and resemble each other. Thus, botanists believe, Cannabis sativa represents a single species which has not stabilized and has many variations (Doorenbos et al., 1971).

Cannabis Sativa is a dioecious species with separate male and female plants, both producing flowers. Some monoecious variants are reported. Pollination appears to be accomplished by air currents. Bees are attracted by male flowers but not by female flowers. Sex cannot be established until flowering begins and the structure of the male and female flower is distinct. Male plants begin shedding leaves shortly after flowering, shied their pollen and die. Female plants lose their older leaves as the seed matures. After shedding their seed, they die. Contrary to popular belief, there is no significant difference in drug content between male and female plants at equivalent states of maturity (Fetterman et al., 1970; Ohlsson et al., 1971). Male plants mature earlier than the females, shed their pollen and die while the female plant is continuing to mature.

The drug content of the plant parts is variable. Generally, the, drug content decreases in the following order: bracts, flowers, leaves. Practically no cannabinoids are found in the stems, roots and seeds. Obviously, fluctuations in pharmacologic activity of a sample of Marihuana, depend on the mixture of these plant parts which is determined by the manicuring process (Fetterman et al., 1970).

Different variants of the plant contain different amounts of psychoactive drug. Variants of cannabis Sativa cover a spectrum of drug contents. Generally, they can be classified as either drug or fiber genotype. Drug type is high in THC and low in cannabidiol and the fiber type is the converse. This type is determined genetically and transmitted by the seed.

Thus, seeds from different geographical areas produce plants with a wide range of drug content. For example, when grown under similar conditions, plants grown from seeds from Mexico may contain 15 times more psychoactive drug than those grown from seeds from Iowa. Of course, individual plants of the same variant often contain greatly different drug content (Fetterman, et al., 1970).

Environmental factors are not as important as heredity in determining type, but they influence to some degree the drug content. However, environmental factors, including type of soil, water, growing space, temperature and light do play an important role in determining the size and vitality of the plant (Doorenbos et al., 1971; Ohlsson et al., 1971; Phillips et al., 1970).

This notorious variability of cannabis preparations causes many disadvantages for detailed and reproducible biological work. Consequently, much effort has been expended to provide a firm chemical basis in order to provide pure and well-defined substances for research.

The major naturally occurring active component of cannabis, 1-delta 9-trans tetrahydrocannabinol, was not isolated in a pure form and its structure illucidated until 1964

(Gaoni and Mechoulam, 1964; Mechoulam and Gaoni, 1967; Mechoulam et al., 1970). In addition, the A' isomer, which is usually present in small quantities in the natural product representing less than 10% of the combined THC content, has a similar spectrum of activity (Hively et al., 1966). These two chemicals, available by industrial synthesis (Fahrenholtz et al., 1967; Petrzilka and Sikemeier, 1967) or by extraction from the natural plant, can apparently reproduce fully the effects of the crude drug in animals and man. More than 20 natural cannabinoids have been identified in the plant (Figure 1) (Mechoulam, 1970; Shani and Mechoulam, 1970; Doorenbos et al., 1971).

All but Delta 11 and Delta 9 THC are inactive psychopharmacologically and do not seem to exert potentiating or other effects. However, new compounds, cannabinoids and non-cannabinoids, are being isolated from the plant and require further investigation. Several studies may indicate that some material present in natural marihuana may act synergistically with THC and potentiate its psychological effect Leniber (1972) Paton and Pertwee (1971) suggest cannabidiol may play this role.

The chemical nomenclature of tetra-hydrocannabinols is in a state of confusion due to the existence of two numbering systems. The dibenzopyran or formal system treats the compound as substituted dibenzopyrans (Delta 9 THC) while the monoterpenoid system considers them as substituted terpenes (Al THC). The formal system will be used hereafter (Figure 2).

Many of the natural cannabinoids are present in the plant as acids. These acids are believed to be psychopharmacologically inactive. However, they are converted rapidly when heated, and slowly when stored into their respective active neutral components (Figure 3) (Waller, 1971). This conversion (decarboxylation) does not apparently occur when the acids are absorbed after oral consumption (Mechoulam, 1970).

The proposed biogenesis (Figure 4) of All THC appears to proceed through cannabidiol (CBD). Cannabis variates of the fiber type apparently do not perform this conversion. Thus, cannabidiol is the cannabinoid present in the largest percentage in the non-drug variety (Phillips et al., 1970). Marihuana appears to lose its potency over time due to conversion of THC to cannabinol (CBN) (Mechoulam, 1970) and this also apparently occurs more quickly for hashish implying the presence of a stabilizing substance in the whole plant (Figure 5).

Recently, the n-propyl homologue, of Delta 9 THC has been isolated from crude marihuana. It has about 20% of the activity of Delta THC in mice, and probably makes only a small contribution to the total marihuana effect (Gill, 1971). Merkus (1971) and Vree et al. (1971) have recently identified propyl and methyl cannabinol homologues in hashish in extremely small quantities.

In addition, numerous other non-cannabinoids have been identified in the natural material. Most of these have little or no psychoactivity (Gill et al., 1970; Bercht et al., 1971). Recently, waxes, starches, oils, terpenes and simple nitrogenous compounds including muscarine, choline and trigonelline as well as volatile low-molecular weight piperdines have been isolated.

Additionally, four more complex nitrogenous containing compounds of the generally-accepted alkaloid type have been reported in marihuana leaves in minute concentrations (average 0.002%). These produced decreased activity but no acute toxicity in mice (Klein et al., 1971).

Another laboratory has isolated two steroids and triterpenes from. marihuana as well as tyramine amide derivatives from the roots (Doorenbos et al., 1971).

Analysis of the smoke obtained from marihuana has been investigated. As in the case of any combustible plant, a gas and particulate phase is produced. Both these phases are delivered to the lung. Both the gas and particulate phase consist of compounds present in approximately the same percentages as other burned cellulose containing materials except for the cannabinoid fraction. This includes carbon dioxide, carbon monoxide, and hydrogen cyanide gases. (Truitt et al. , 1970)

The remainder, the smoke condensate, consists of a complex mixture of relatively non-volatile compounds. Included in this mixture are the cannabinoids (16%), carbohydrates and alcohols (8%), fatty and aromatic acids (11%), polybasic acids (7%), aliphatic amines (1%), aromatic phenols (27%), aliphatic phenols (6%), tannin (6%), unidentified compounds (18%) (Truitt et al., 1970).

Another group of investigators (Magus and Harris, 1971) compared the tar collected from combustion of marihuana cigarettes with the tar yielded from tobacco cigarettes. They reported that the total tar yield from marihuana was slightly less than half that produced by an equal weight of tobacco. The tar contained similar constituents based on typical changes produced on skin of mice.

In addition, there a multitude of synthetic compounds related to the naturally occurring Delta 9 THC derivatives and much more potent (Figure 6). A large number of bomologues have been prepared all with similar activity but differing widely in their potency.

In general, the activity of these compounds increases dramatically over that of A' THC by lengthening the 3 alkyl side chain to 6 and 7 carbons, with additional branching in the alpha and beta positions. The dimethylheptyl analogue (EA1476 or DMHP) is the most active having 50 times the activity of A' THC. The 1-methyloctyl substitution (MOP, EA1465) is the next most potent, compound. The 1,2-dimethylortyl substitution resulted in a 251 fold decreased activity from DMHP. (Domino et al., 1972; Sim and Tucker, 1963)

Numerous variations of the basic structures in the cyclohexene moeity of the molecule, as well as the replacement of -both methyl groups-by-hydrogen resulted in partial and even complete, loss of activity (Domino et al., 1972; Sim and Tucker, 1963).

Mechoulam. (1971) has summarized the investigations related to the structure activity relationships of the cannabinoids as follows:

(1) The pyran ring with a hydroxyl group at 1 position and an alkyl group at the 3 position is an essential requirement for psychotomimetic activity, eg., cannabidiol is inactive.

(2) The aromatic hydroxyl group has to be f reo or esterified for activity.

(3) The presence of a carboxyl, acetyl or carbomethoxyl group in position 2 or 4 renders the compound inactive. Substitution with an alkyl .group at position 2 retains activity.

(4) Dextrorotary (+) delta-9-THC is inactive whereas its optical isomer levorotary (-) delta9-THC is active.

(5) Maximal activity is seen if the double bond is in the delta-9 or delta-8 position. The delta,-6a, 10a-THC is relatively inactive. 9 (6) The activity of the delta-6a, 10a-THC can be increased by replacement of the pentyl side chain with a hexyl side chain to form synhexyl

which is an active compound. Branching of the side chain may lead to considerable increase in potency. The substitution of a dimethylheptyl side chain for the pentyl side chain in the delta-6a, 10a analogue of THC to form DMHP or EA1476 results in a marked increase in pharmacologic activity.

(7) Substituents at the 9 and 10 position have to be in the plane of the ring (that is equatorial) in order that high activity be retained.

More detailed information on materials, chemistry, bioassays, analytical methods, and methodology for detecting THC or its metabolites in biological fluids may be obtained from The Metabolism of the Tetrahydrocannabinols (Lemberger, 1972) and The Secretary of Health, Education and Welfare, 1972 Report on Marihuana and Health.

History of the Intoxicant Use

The preceding history of the medical use of marihuana has provided an outline of how marihuana has been alleged to care diseases and relieve pain. This section discusses the non-medical use of cannabis. The survey includes a discussion of marihuana use in India, the rest of Asia, Africa, Europe, and the United States; and a concluding analysis of the intoxicant use in contemporary times.

Assessing marihuana's use as an intoxicant is difficult because for many people around the world, its importance as an intoxicant has been secondary to its use as a folk medicine or a ceremonial adjunct (Grinspoon, 1971: 173-174). Caffeine and nicotine apart, cannabis is second in worldwide popularity only to alcohol.

India

Marihuana was probably first used as an intoxicant in India around 1000 B.C., and soon became an integral part of Hindu culture (Snyder, 1970: 125). In China, where the marihuana plant had been used to make cloth and certain medicines for centuries, it was not recorded as an intoxicant. Explanations are unclear as to why marihuana was used as an intoxicant in India but not in China.

Marihuana was also used as an intoxicant in other parts of the world prior to 500 A.D. but was not as well documented as the use of opium. The drug "nepenthe" in Homer's Odyssey is believed by a number of scholars to have been a brew in which the most active ingredient was hemp (Brotteaux, 1967: 10). Galen wrote in the second century that it was customary to promote hilarity and happiness at banquets by giving the guests hemp (Reininger, 1967: 14-15).

Cannabis is used in three different preparations in India (Snyder, 1970: 27). The first is called bhang, comparable in potency to marihuana in the United States. It is made from the leaves and stems of uncultivated plants and blended into a pleasant tasting liquid concoction. The second is ganja, more potent than bhang, made from the tops of cultivated plants. The third and most potent preparation, charas, is similar to hashish or "hash" and is obtained by scraping the resin from the leaves of the cultivated plants. Hard blocks are pressed from this material which are converted for smoking.

High-caste Hindus are not permitted to use alcohol. But they are allowed bhang at religious ceremonials, and also employ it as an intoxicant at marriage ceremonies and family festivals. Bhang is used by laborers in India in much the same way as beer is used in the United States (Barber, 1970: 80).

The lower classes of India use either a few pulls at a ganja pipe or sip a glass of bhang at the end of the day to relieve fatigue (Grinspoon, 1971: 173), to obtain a sense of well-being, to stimulate appetite, and to enable them to bear more cheerfully the "strain and monotony of . . . daily routines" (Geller and Boas, 1969: 5). These types of users and objectives are frequently the reverse of those in the United States where marihuana users consider

themselves an exclusive and advanced "in-group" (Andrews and Vinkenoog, 1967: iii). A major intoxicant use in India is for religious purposes.

Asia and the Middle East

Cannabis spread from India to other parts of Asia, to the Middle East and then to Africa and South America, although some believe it may have originated independently in the latter two continents (Fort, 1969: 15). Cultural values may have played a part in determining its use. Opium and cannabis were equally available in pre-Communist China; but cannabis had no vogue as an intoxicant (Barber, 1970: 80). The Chinese spoke of the plant as the "Liberator of Sin." In India, it was called. the "Giver of Life" (Fort, 1970: 15). One author proposed that temperament may have also played a role in this determination, suggesting that perhaps the placid, practical Chinese did not appreciate the euphoria produced by cannabis (Snyder, 1070: 125).

Additional evidence of mid-Asian use comes from cuneiform tablet interpretations that ascribe use in Persia circa 700-600 B.C. and of the time of Ashurbanipal's Assyrian reign, 669-626 B.C. (Blum. and Associates, 1969, 1: 62).

The drug's popularity as an intoxicant spread to the Middle East and thoroughly permeated Islamic culture within a few centuries (Geller and Boas, 1969: 5). Because alcohol was prohibited to the followers of Mohammed, cannabis was accepted as a substitute.

The Myth of the Assassins

Two Muslim myths, one from the 10th century A.D. and the other from the 13th century A.D., have been the sources of some of the contemporary attitudes about the drug. The first myth deals with hashish as a magical eastern drug brought by the Arabs into Spain in the 10th century. These invaders confined its use primarily to themselves, taking it back to Africa when they left Spain. Although it did not become a European habit, some beliefs about the drug were left behind.

The existence of this "magical eastern drug" was probably known to Marco Polo, the Venetian traveler of the 13th century A.D. before he left on his journey to the East. Marco Polo returned to Europe with his own tale of cannabis which, in the potent form of hashish, was said to be used as an intoxicant by Hasan-I-Sabbah to send his ruthless followers on missions of murder. The word "assassin" was said to be derived from the word "hashish," or from Hasan (Geller and Boas, 1969: 6). Marco Polo had written about how this "Old Man of the Mountain" sent his men out on their missions with all the color and pageantry that Europeans associated with the East. As Marco Polo described:

In the territory of the Assassins there were delicious walled gardens in which one can find everything that can satisfy the needs of the body and the caprices of the most exacting sensuality. Great banks of gorgeous flowers and bushes covered with fruit stand amongst crystal rivers of living water.... Trellises of roses and fragrant vines cover with their foliage pavilions of jade and porcelain furnished with Persian carpets and Grecian embroideries.

Delicious drinks in vessels of gold or crystal are served by young boys or girls, whose dark unfathomable eyes cause them to resemble the Houris, divinities of that Paradise which the Prophet promised to believers. The sound of harps mingles with the cooing of doves, the murmur of soft voices blends with the sighing of the reeds. All is joy, pleasure, voluptuousness and enchantment.

The Grand Master of the Assassins, whenever he discovers a young man resolute enough to belong to his murderous legions . . . invites the youth to his table and intoxicates him with the plant "hashish." Having been secretly transported to the pleasure gardens the young man imagines that he has entered the Paradise of Mahomet. The girls, lovely as Houris, contribute to the illusion. After he has enjoyed to satiety all the joys promised by the-Prophet to his elect, he falls back to the presence of the Grand Master. Here he is informed that he can enjoy perpetually the delights he has just tasted If he will take part in the war of the Infidel as commanded by the Prophet (Geller and Boas, 1969: 6).

Another translation (Kitti, 1967: 24) begins the tale this way:

Now no man was allowed to enter the Garden save those whom he intended to be his ASHISHIN.

In reality, this was a religious situation and scholars have long since exposed Marco Polo's tale as being a myth, at best an imaginative embellishment of tales he had heard.

Africa

Use of cannabis in most parts of Africa developed slowly, most of it during the past 100 years (Blum and Associates, 1969, I: 73). A report from Africa in 1891 (Reininger, 1966: 141-142), dealt with a tribe that used hemp as an intoxicant in their newly formed religion and in preparation for battle. A similar use is described in the Congo, when Simba warriors in 1964 were said to use a cannabis-alcohol mixture in preparation for battle, to rouse themselves for the battle and to magically guarantee immunity from harm.

In Morocco, marihuana, called kif, has been used as an intoxicant by adult males for centuries; that custom continues today even though the drug is illegal (Mikuriya, 1970: 122-123).

Although moderate use appears to be tolerated in the areas of India, North Africa and the Middle East, excessive use is generally viewed as indicative of serious personality problems (Geller and Boas, 1969: 7).

Europe

One of the more suggestive parallels between 19th century France and the United States today is the fact that the French interest in cannabis at that time was aroused by the returning French soldiers and scientists of Napoleon's army in Egypt, a source of the drug. A similar interest occurred in the United States after the Korean conflict, and has intensified since Vietnam (Geller and Boas, 1969: 7).

During the 19th century, European interest in the drug was aided by two scientific reports, the first by W. B. O'Shaughnessy in 1839, and the second report by Queen Victoria's physician, Russell Reynolds. Both men recommended its medical use for a variety of ailments and as a mild euphoriant (Grinspoon, 1971: 56). Cannabis received highly laudatory testimonials from the medical profession of that day and was readily available without prescription (Snyder, 1970: 121).

Interest in cannabis was further kindled by popular writers who used and spoke of hashish

enthusiastically, including Charles Baudelaire, Arthur Rimbaud, and Pierre Gautier. Gautier and Baudelaire, in fact, were members of the Club des Hachischins, in which a number of writers and intellectuals gathered and experimented with hashish (Geller and Boas, 1969: 13).

Although the public delighted to read of the French writers' drug experiences, the public did not care to engage in the same kind of activity; to them the experiences were frightening and repugnant. "As a result, the smoking of hashish remained the sub-rosa province of a few European artists until the recent trans-Atlantic phenomenon of the American drug culture" (Geller and Boas, 1969: 8).

United States

The, events surrounding the introduction of cannabis use to the New World are entirely unclear. Some historians say the Spaniards brought the plant with them in the 16th century, other say marihuana smoking came in with the slave trade or with the Asian Indian migration of the late 18th century.

The hemp plant was cultivated in the United States for centuries, apparently without general knowledge of its intoxicating properties (Grinspoon, 1971: 10). Cannabis was an often used medicine in the United States in the 19th century. It was easily available without a prescription and was also widely prescribed by physicians (Snyder, 1970: 26). Hemp was used by the pioneers to cover their wagons. The plant was a major crop in Kentucky, Virginia, Wisconsin and Indiana, and was one of the more important southern agricultural products, after cotton.. It is still used to make rope, twine and textiles, while the seed is used as bird food (Geller and Boas, 1969: 16).

Marihuana use as an intoxicant in the United States began slowly in the early part of this century. Puerto Rican soldiers, and then Americans who were stationed in the Panama Canal Zone, are reported to have been using it by 1916. American soldiers fighting Pancho Villa circa 1916 also learned to use it. This follows the first reported use in Mexico in the 1880's (Blum and Associates, 1969, 1: 69-70). Intoxicant use in the United States is also traced to the large influx of Mexican laborers in the 1910's and 1920's (Geller and Boas, 1969: 14).

The 1933 Report of the "Military Surgeon" stated, regarding marihuana use among the soldiers in the Canal Zone, that:

Marihuana as grown and used on the Isthmus of Panama is a mild stimulant and intoxicant. It is not a "habit forming" drug in the sense that the derivatives of opium, cocaine, and such drugs, are as there are no symptoms of deprivation following its withdrawal.

Delinquencies due to marihuana smoking which result in trial by military court are negligible in number when compared with delinquencies resulting from the use of alcohol drinks, which is also classed as a stimulant and intoxicant (Geller and Boas, 1969: 147).

The report went on to say that marihuana presented no threat to military discipline, and "that no recommendations to prevent the sale or use of marihuana are deemed advisable."

Cannabis has been rejected in various societies on ascetic grounds. In such puritanical societies such as the Wahabil of Arabis and the Senussis of Libya, no smoking of any kind was tolerated, nor was coffee. In North Africa, social rank dictated use: the aristocratic

Moors scorned both hemp and tobacco smoking, preferring instead, as compatible with high status, opium eating (Blum and Associates, 1969, 1: 73).

One statement highlighting this kind of value conflict comes from a Nigerian journalist (Davies, 1966: 299-300) attempting to explain the 15-year prison sentences of foreign tourists for growing and smoking marihuana:

There is a growing trend in the more economically advanced countries to indulge at leisure in the exploration of the personality. At a certain stage of development, there is less need to produce and more time to spend consuming. This is healthy. If used properly, marihuana could be helpful at this stage of development. However, countries which are only beginning to develop a more complex economic structure must channel all their energies into creating a new system. This means that they must sacrifice more of their pleasure. People who smoke hemp seem on the whole to be less aggressive than people who drink alcohol. Hemp smoking may have a positive value for certain social functions....

One of the first acts of the Military Government was to issue a decree making it punishable by death to grow marihuana, and by up to twenty years of prison for merely being in possession of it . . . meantime, we Nigerian have to stop getting high for a while and develop our country.

In the United States, the decade of the 1960's has seen a spectacular and unprecedented spread of the use of marihuana, chiefly among the youth. An estimated 24 million persons have used marihuana and approximately 3.4 million are current users. The numbers involved and the fact that use spans all age groups and social classes in American life has produced marked public reaction and a need for more information on the drug.

References

Adams, P.: "Marihuana," Bulletin of the New York Academy of Medicine (1942).

Allentuck, S. and Bowman, K. M.: "The Psychiatric Aspects of Marihuana Intoxication," American Journal of Psychiatry, 99(2) (September 1942).

Andrews, G. and Vinkenoog, S. (eds.) : The Book of Grass: An Anthology on Indian Hemp, London: Peter Owen Limited (1967).

Barber, T. X.: LSD, Marihuana, Yoga, and Hypnosis, Chicago: Aldine Publishing Company (1970).

Bloomquist, E. R.: Marijuana, Beverly Hills: Glencoe Press (1968).

Blum, R. H. and Associates: Drugs I: Society and Drugs: Social and Cultural Observations, San Francisco: Jossey-Bass Inc. (1969).

Blum, R. H. and Associates: Drugs II: Students and Drugs: College and High School Observations, San Francisco: Jossey-Bass Inc. (1969).

"The Cannabis Problem: A Note On The Problem and The History of International Action," Bulletin on Narcotics,14(4) (1962).

"Cardiac Glycocides Found Cytotoxic," Medical News (London) March 26 (1965).

Chopra, 1. C. and Chopra, R. N.: "The Use of the Cannabis Drugs in India," Bulletin on Narcotics, 9(1) (1957).

Chopra, R. N.: "Use of Hemp Drugs in India," The Indian Medical Gazette, (June 1940).

Commission of Inquiry into the Non-Medical Use of Drugs: Interi Report, Ottawa (1970).

David, J. P. and Ramsey, H. H.: "Antiepileptic Action of Marihuana-active Substances," Federation Procedures, 8 (1949).

Davies, A.: "Nigeria Whispers," Andrews, G. and Vinkenoog, S. (ed&) : The Book of Grass: An Anthology on Indian Hemp, London: Peter Owen Limited (1967).

Department of Health, Education and Welfare: Marihuana and Health, A Report to the Congress from the Secretary, Department of Health, Education and Welfare (March 1971).

Efron, D. H. (ed.) : Psychotomimetic Drugs, New York: Raven Press (1969).

Feinglass, S. J.: "Marijuana: Standardization, Characterization and Potential Therapeutic Uses," Journal of Secondary Education, 43 (May 1968).

Fort, J.: The Pleasure Seekers: The Drug Crisis, Youth and Society, New York: Grove Press, Inc. (1969).

Frank, Ira, University of California, Los Angeles, School of Medicine, Personal Communication, September 1971.

Geller, A. and Boas, M.: The Drug Beat, New York: Cowles Book Company, Inc. (1969).

Goode, E.: Marijuana, Chicago: Atherton Press (1969). Grinspoon, L.: "Marihuana," Scientific American, 221(6) (December 1969).

Grinspoon, L.: Marihuana Reconsidered, Cambridge: Harvard University Press (1971).

Hearings before the Committee on Ways and Means, U.S. House of Representatives, Taxation of Mari ana, 75th Congress, 1st Session on H.R. 6385 (1937).

Himmelsbach, C. J.: "Treatment of the Morphine Abstinence Syndrome with a Synthetic Cannabis-Like Compound," Southern Medical Journal, 37 (January 1944). Hollister, L. E.: "Marihuana in Man: Three Years Later." Science, 172 (April 2, 1971).

Indian Hemp Drugs Commission: Marijuana, Report of the Indian Hemp Drugs Commission, Government Central Printing Office, Simla (1894).

Kabelik, J.: "Hemp (Cannabis sativa)-Antibiotic Drug," Pharmazie, 121 (1957).

Kabelik, J., Krejci, Z., and Santavy, F.: "Cannabis as a Medicant," Bulletin on Narcotics, 12(3) (July-September 1960).

Kabelikovi, J.: "Antibacterial Action of Cannabis Indica," Lekarske Listy, 15 (7) (1952).

Kitti, Phillip K.: "The Assassins," Andrews, G. and Vinkenoog, S. (eds.) : The Book of Grass: An Anthology of Indian Hemp, New York: Grove Press, Inc. (1967). Krejci, Z.: "On the Problem of Substances with Antibacterial and Hashish Action in Hemp (Cannabis Sativa L.)," Casopis8 Lekaru Ceskych (1961).

Krejci, Z., Horak, M., and Santavy, F.: "Hemp (Cannabis sativa)-Antibiotic Drug, 3rd Report," Pharmazie, 14 (1959).

Loewe, S. and Goodman, L. S.: "Anticonvulsant Action of Marihuana-Active Substances," Federation Procedures, 6 (1947).

Mikuriya, T. H.: "Cannabis Substitution. An Adjunctive Therapeutic Toot in the Treatment of Alcoholism," Medical Times, 98 (4) (April 1970).

Mikuriya, T. H.: "Marihuana in Morocco," Aaronson, B. & Osmond, H. (eds.) : Psychedelics, The Uses and Implications of Hallucinogenic Drugs, Garden City: Doubleday & Company, Inc. (1970).

Mikuriya, T. H.: "Marihuana In Medicine: Past, Present and Future," California Medicine, 110 (January 1969). Murphy, H. B. M.: "The Cannabis Habit: A Review of Recent Psychiatric Literature," Bulletin on Narcotics, 15(1) (1.963).

McMeens, R. R.: "Report of the Committee on Cannabis Indica," Transactions of the Fifteenth Annual Meeting of the Ohio State Medical Society, Columbus, Ohio: Follett, Foster and Co. (1860).

New York City Mayor LaGuardia's Committee on Marihuana, The Marihuana Problem in the City of New York: Sociological, Medical, Psychological and Pharmacological Studies, Lancaster, Pennsylvania: The Jaques Cattell Press (1944).

O'Shaughnessy, W. B.: "On the Preparations of the Indian Hemp, or Gunjah," Trans. Med. and Psy. SOC., Bengal (1838-40 and [illegible]12).

Parker, C. S. and Wrigley, F. "Synthetic Cannabis Preparations in Psychiatry: (I) Synhexyl," Journal of Mental Sciences, 96 (1950).

Reininger, W.: "Historical Notes," Solomon, D. (ed.) The Marihuana Papers, New York: The New American Library, Signet Books (1966).

Reininger, W.: "Remnants From Historic Times," Andrews G. and Vinkenoog, S., (eds.) The Book of Grass: An Anthology on Indian Hemp, London: Peter Owen Limited (1967).

Robinson, V.: "Concerning Cannabis Indica "I Ciba Symposia, 8 (Augus-September, 1946).

Snyder, S.: Uses of Marijuana, New York: Oxford University Press (1970).

Snyder, S.: "What We Have Forgotten About Pot-A Pharmacologist's History," New York Times Magazine, (New York, New York) (December 13, 1970).

Solomon, D. (ed.) : The Marihuana Papers, New York: New American Library (1968).

Stockings, G. T.: "A New Euphoriant for Depressive Mental States," British Medical Journal, 1 (10,47).

Thompson, L. J. and Proctor, R. C.: "The Use of Pyrahexyl in the Treatment of Alcoholic and Drug Withdrawal Conditions," North Carolina Medical Journal, 14 (October, 1953).

Veliky, I. A. and Genest, K.: "Suspension Culture of Cannabis Sativa," Lloydia, 33(4) (December, 1970).

Walton, R. P.: Marihuana: America's New Drug Problem, Philadelphia: J. B. Lippincott (1938).

Watt, J. M.: "Dagga in South Africa," Bulletin on Narcotics, 13(3) (1961).

Watt, J. M. and Breyer-Brandwijk, M. G.: The Medicinal and Poisonous Plants of Southern and Eastern Africa, 2nd edition, Edinburgh and London: E. and S. Livingstone, Ltd. (1962).

History of Marihuana Use: Medical and Intoxicant

From: Marihuana, A Signal of Misunderstanding, the Report of the US National Commission on Marihuana and Drug Abuse, 1972

The term "marihuana" is a word with indistinct origins. Some believe it is derived from the Mexican words for "Mary Jane"; others hold that "marihuana" comes from. the Portuguese word marigu-ano which means "intoxicant" (Geller and Boas, 1969: 14). This chapter outlines the many and varied uses of marihuana through history, and deals with its use in medicine and its use as an intoxicant.

The experience of the 1960's might lead one to surmise that marihuana use spreads explosively. The chronicle of its 3,000 year history, however, shows that this "explosion" has been characteristic only of the contemporary scene. The plant has been grown for fiber and as a source of medicine for several thousand years, but until 500 A.D. its use as a mind-altering drug was almost solely confined in India. The drug and its uses reached the Middle and Near East during the next several centuries, and then moved across North Africa, appeared in Latin America and the Caribbean, and finally entered the United States in the early decades of this century (Snyder, 1970: 129).

Meanwhile it had been introduced into European medicine shortly after the invasion of Egypt by Napoleon and had a minor vogue as an intoxicant for a time in France.

Regardless of which parts of the world are discussed, many of the same problems and concerns about cannabis are common to all, including the United States. Understanding its various uses during many centuries in diverse countries and continents can perhaps lead to a better understanding of marihuana in general.

History of the Medical Use

The history of cannabis products and their use has been long, colorful and varied. "To the agriculturist, cannabis is a fiber crop; to the physician, it is an enigma; to the user, a euphoriant; to the police, a menace; to the trafficker, a source of profitable danger; to the convict or parolee and his family, a source of sorrow" (Mikuriya, 1969: 34). The fact is that cannabis has been held simultaneously in high and low esteem at various times throughout recorded history, particularly in our own times.

The volume of information available on the medical application of cannabis is considerable. Occasionally certain references have been condensed or deleted, but this should not detract from the completeness of the report.

This historical survey of the medical uses of marihuana is introduced by abroad overview of its use, including brief notes on current and projected research, and then considers specific historical settings and circumstances in ancient China, moving on to Egypt, India, Greece, Africa, and the Western World.

Cannabis sativa has been used therapeutically from the earliest records, nearly 5,000 years ago, to the present day (Mikuriya, 1969: 34) and its products have been widely noted for their effects, both physiological and psychological, throughout the world. Although the Chinese and Indian cultures knew about the properties of this drug from very early times, this information did not become general in the Near and Middle East until after the fifth century A.D., when travelers, traders and adventurers began to carry knowledge of the drug westward to Persia and Arabia.

Historians claim that cannabis was first employed in these countries as an antiseptic and analgesic. Other medical uses were later developed and spread throughout the Middle East, Africa, and Eastern Europe.

Several years after the return of Napoleon's army from Egypt, cannabis became widely accepted by Western medical practitioners. Previously, it had had limited use for such purposes as the treatment of burns. The scientific members of Napoleon's forces were interested in the drug's pain relieving and sedative effects. It was used during, and to a greater extent, following his rule in France, especially after 1840 when the work of such physicians as O'Shaughnessy, Aubert-Roche, and Moreau de Tours drew wide attention to this drug.

With the rise of the literary movement of the 1840-1860 period in France (Gautier, Baudelaire, Dumas, etc.), cannabis became somewhat popular as an intoxicant of the intellectual classes.

In the United States, medical interest in cannabis use was evidenced in 1860 by the convening of a Committee on Cannabis Indica of the Ohio State Medical Society, which reported on its therapeutic applications (McMeens, 1860: 1). Between the period 1840-1890, Walton states that more than 100 articles were published recommending cannabis for one disorder or another.

Concern about cannabis as an intoxicant led the government of India to establish the India Hemp Commission of 1893-94 to examine the entire question of cannabis use in India.

Paralleling the question over cannabis use in the latter half of the 19th century was the growing medical use of other medications superior to cannabis in their effects and more easily controlled as to dose. Consequently, medical use of cannabis declined and cannabis began to lose support of the medical profession.

During the years between 1856-1937, cannabis lost its image as a medicine and was left with a disreputable image as an intoxicant. Strong public reaction coupled with a campaign in the public press led to a federal anti-marihuana law in 1937. (The drug was illegal in many states before 1937.) The issue of medical use remained active, however, and Dr. William C. Woodward, Legislative Counsel to the AMA, an opponent of cannabis use and the only physician to be a witness at the Taxation of Marihuana hearings, stated:

There are exceptions in treatment in which cannabis cannot apparently be successfully subsituted for. The work of Pascal seems to show that Indian Hemp has remarkable properties in revealing the subconscious; hence, it can be used for psychological, psychoanalytic and psychotherapeutic research (Hearings, House of Representatives, 1937: 91).

Although cannabis drugs are generally regarded as obsolete and rarely used in "western" medicine today, cannabis is "still used extensively in the Ayruvedic, Unani and Tibbi systems of medicine of the Indian-Pakastani subcontinent" ("The Cannabis Problem, 1962: 27). The Pharmacopoeias of India mention cannabis use in the recent past. Two preparations of cannabis, a liquid extract and a tincture, are listed in the 1954 and 1966 Pharmacopoeias of India which contain descriptions of cannabis and its extract and how it is made (Chopra & Chopra, 1957: 9).

A more recent source makes reference to the fact that "in contemporary India and Pakistan, there continues to be widespread indigenous medical, 'quasi-medical,' and illicit use of both opium and cannabis" (Chopra & Chopra, 1957: 12-13). Bouquet notes that hemp resin is occasionally used in the native medicines of the countries where it is collected. He points especially to India where, "the medical systems . . . make much use of cannabis as a sedative, hypnotic, analgesic, anti-spasmodic and anti-hemorrhoidal" (Bulletin on Narcotics, 1962:27).

According to the Canadian Commission of Inquiry into the Non-Medical Use of Drugs:

There is no currently accepted medical use of cannabis in North America outside of an experimental context. Although cannabis has been reported to produce an array of possibly useful medical effects, these have either not been adequately investigated, or can be replaced by using other more readily available and convenient drugs. The natural product's variability in potency and instability over time are among the factors which have led to its disfavor in Western 20th century medicine.... cannabis has often been employed in the past, and is currently used illicitly in North America, to reduce the secondary symptoms and suffering caused by the flue and the common cold. These . . . alleged therapeutic properties of cannabis have not been adequately studied in a scientific context, and their general medical potential remains a matter of conjecture (1970: 74).

Similar statements regarding cannabis are to be found in Marijuana, edited by Erich Goode, and in the textbook Pharmacological Basis of Therapeutics by Goodman and Gilman (1970: 300). Concerning therapeutic uses, the latter states:

Although cannabis was once used for a wide variety of clinical disorders and has even been demonstrated to have antibacterial activity, there are at present no well substantiated indications for its use. It is no longer an official drug. Preparations are rarely available (cannabis preparation and synthetic THC are obtainable only for research purposes), and prescriptions are regulated by special tax laws.

Hollister (1971: 27) lists a few difficulties of the therapeutic use of cannabis:

1. The onset of the action of oral doses of THC is often rather slow, contrary to that of conventional sedative-hypnotics.
2. Doses high enough to produce a marked hypnotic effect are almost always accompanied by some degree of psychotomimetic-like perceptual disorders, which many patients might find disagreeable.
3. The fine titration of dose required to provide sedative effects is likely to be difficult.
4. The drug does not have novel effects compared with other sedative-hypnotics.

The Department of Health, Education, and We] fare report to Congress in 1971, Marihuana and Health, repeats the statement of the Canadian Interim Report of Inquiry into the Non-Medical Use of Drugs, and states: "There is no currently accepted medical use of cannabis in the United States outside of an experimental context" (DHEW: 1971: 27). Allen Geller and Maxwell Boas (1969: 4) think that cannabis' "unsavory reputation has largely stymied further research."

Despite the many statements discounting cannabis' therapeutic usefulness, some authorities maintain that its medical value might be reborn through further research and/or use. David Solomon, in his foreword to The Marihuana Papers (1968: xxi) argues that:

Marihuana should be accorded the medical status it once had in this country as a legitimate prescription item. After 1937, with the passage of the Marihuana Tax Act and subsequent federal and state legislation, it became virtually impossible for physicians to obtain or prescribe marihua..a preparations for their patients. Thus, the medical profession was denied access to a versatile pharmaceutical tool with a history of therapeutic utility going back thousands of years.

In a 1970 article, "Pot Facing Stringent Scientific Examination," reference is made to Dr. Par who states that there are three areas in which "chemical and animal experiments are under way:"

(1) Analgesia-mood elevation plus analgesic power may make useful drug.

(2) Blood pressure reduction-hypertension may be helped by new drugs which lower the blood pressure by what seems to be action on the central nervous system.

(3) Psychotherapeutic-new compounds are antidepressants and antianxiety drugs (Culliton: 1970).

Mikuriya cites it studies concerning cannabis funded by the National Institute of Mental Health in 1961. The studies were "either specialized animal experiments, part of an observational sociologic study of a number of drugs, or explorations of chemical detection methods" (Mikuriya, 1969: 38).

Feinglass has pointed to four general categories into which the clinical studies of marihuana could be divided (1968: 206-208). They are:

1. Anticonvulsant effects-treatment of tetanus, convulsions of rabies, epilepsy, and infant convulsions.
2. Psychotherapeutic actions - appetite-stimulation, treatment of depression, and as a sedative and hypnotic in reducing anxiety; treatment of addiction.
3. Antibiotic properties.
4. Pain-affecting power.

Grinspoon suggests:

Very little research attention has been given to the possibility that marihuana might protect

some people from psychosis. Among users of the drug, the proportion of people with neuroses or personality disorders is usually higher than in the general population; one might therefore expect the incidence of psychoses also to be higher in this group. The fact that it is not suggests that for some mentally disturbed people, the escape provided by the drug may serve to prevent a psychotic breakdown (1969: 24).

Mikuriya lists many possible therapeutic uses of THC and similar products in his paper "Marihuana in Medicine: Past, Present and Future." He includes:

Analgesic-hypnotic, appetite stimulant, antiepileptic, antispasmodic, prophylactic and treatment of the neuralgias, including migraine and tic douloureaux, antidepressant-tranquillizer, anti-asthmatic, oxytocic, anti-tussive, topical anesthetic, withdrawal agent for opiate and alcohol addiction, child birth analgesic, and antibiotic (1968: 39).

China

The oldest known therapeutic description Of cannabis was by the Emperor Shen-Nung in the 28th century B.C. in China, where the plant had long been grown for fiber. He prescribed cannabis for beri-beri, constipation, "female weakness," gout, malaria, rheumatism and absentmindedness (Bloomquist, 1968: 19).

Egypt

In Egypt, in the 20th century B.C., cannabis was used to treat sore eyes. Additional medical usage was not reported until much later.

India

Prior to the 10th century B.C., bhang, a cannabis preparation, was used as an anesthetic and antiphlegmatic in India. In the second century A.D., a Chinese physician, Hoa-Tho, prescribed it as an analgesic in surgical procedures (Mikuriya, 1969: 34).

From the 10th century B.C. up to 1945 (and even to the present time), cannabis has been used in India to treat a wide variety of human maladies. The drug is highly regarded by some medical practitioners in that country.

The religious use of cannabis in India is thought to have preceded its medical use (Blum and Associates, II, 1969: 73; Snyder, 1970: 125). The religious use of cannabis is to help "the user to free his mind from worldly distractions and to concentrate on the Supreme Being" (Barber, 1970: 80).

Cannabis is used in Hindu and Sikh temples and at Mohammedan shrines. Besides using the drug as an aid to meditation, it is also used to overcome hunger and thirst by the religious mendicants. In Nepal, it is distributed on certain feast days at the temples of all Shiva followers (Blum & Associates, 1969, 11: 63).

The Hindus spoke of the drug as the "heavenly guide," "the soother of grief." Considered holy, it was described as a sacred grass during the Vedic period (Fort, 1969: 15). A reference to cannabis in Hindu scriptures is the following:

To the Hindu the hemp plant is holy. A guardian lives in bhang ... Bhang is the joy giver,

the sky filer, the heavenly guide, the poor man's heaven, the soother of grief ... No god or man is as good as the religious drinker of Mang. The students of the scriptures of Benares are given bhang before they sit to study. At Benares, Ujjain and other holy places, yogis take deep draughts of Mang that they may center their thoughts on the Eternal . . . By the help of Mang ascetics pass days without food or drink. The supporting power of Mang has brought many a Hindu family safe through the miseries of famine (Snyder, 1970: 125).

Greece

In ancient Greece, cannabis was used as a remedy for earache, edema, and inflammation (Robinson, 1946: 382-383).

Africa

Cannabis was used in Africa to restore appetite and to relieve pain of hemorrhoids, its antiseptic uses were also known to certain African native tribes (O'Shaughnessy, 1842: 431). Various other uses, in a number of countries, included the treatment of tetanus, hydrophobia, delirium tremens, infantile convulsions, neuralgia and other nervous disorders, cholera, menorrhagia, rheumatism, hay fever, asthma, skin diseases, and protracted labor during childbirth.

The 19th Century

Documents of the 19th century report on the use of cannabis to control diarrhea in cholera and to stimulate appetite. In his reports of the late 1830's and early 1840's, O'Shaughnessy (1842: 431) stated that tetanus could be arrested and cured when treated with extra large doses of cannabis.

John Bell, M.D., Boston, reported enthusiastically in 1857, about the effects of cannabis in the control of mental and emotional disorders as opposed to the use of "moral discipline" to restrain the mentally ill. Similarly, in 1858, Moureau. de Tours reported several case histories of manic and depressive disorders treated with hashish (Walton, 1938: 3).

The Ohio State Medical Society's Committee on Cannabis Indica, convened in 1860, reported that their respondents claimed cannabis successfully treated neuralgic pain, dysmenorhea, uterine hemorrhage, hysteria, delirium tremens, mania, palsy, whooping cough, infantile convulsions, asthma, gonorrhea, nervous rheumatism, chronic bronchitis, muscular spasms, tetanus, epilepsy and appetite stimulation (McMeens, 1860: 1).

The India Hemp Commission (1894: 174) likewise was informed of similar medicinal uses for cannabis. Specific reports included the use of cannabis as an analgesic, a restorer of energy, a hemostat, an ecbolic, and an antidiaretic. Cannabis was also mentioned as an aid in treating hay fever, cholera, dysentery, gonorrhea, diabetes, impotence, urinary incontinence, swelling of the testicles, granulation of open sores, and chronic ulcers. Other beneficial effects attributed to cannabis were prevention of insomnia, relief of anxiety, protection against cholera, alleviation of hunger and as an aid to concentration of attention.

MEDICAL USES IN THE 20TH CENTURY

Despite the fact that marihuana was made illegal in the United States in 1937, research has

continued on the medical uses of marihuana. The findings include various possible medical applications of cannabis and its chemical derivatives.

One of the most recent and interesting findings (Frank, 1972) concerns the effect of cannabis in reducing intraocular pressure. It was found that as the dose of marihuana increased, the pressure within the eye decreased by up to 30%. This occurred in normal persons as well as in those with glaucoma, a disease of the eye in which increased intraocular pressure may cause blindness. Much more research is necessary in connection with this experimental clinical finding before final judgment can be passed on such a possible therapeutic value.

During the past 20 years in western medicine, marihuana has been assigned antibiotic activity; as a result, several studies relating to this possibility have been undertaken. H. B. M. Murphy (1963: 20) reported investigations in Eastern Europe. He stated that "it is alleged to be active against gram positive organisms at 1/100,000 dilution, but to be largely inactivated by plasma, so that prospects for its use appear to be, confined to E. N. T. (ear, nose and throat) and skin infections."

Dr. J. Kabelikovi (1952: 500-503) and his coworkers carried out tests on rats, which were similar to tests carried out with penicillin in vitro. The alcohol extract of cannabis was bacterially effective against many gram-positive and one gram-negative microorganisms. It was also found that a paste form of external application was successful. According to Kabelikovi, "from a study of 2,000 herbs by Czechoslovakian scientists it was found that cannabis indica (the Indian Hemp) was the most promising in the realm of antibiotics."

In a 1959 publication of Pharmacie, Krejci stated: "From the flowering tips and leaves of hemp, cannabis sativa var indica bred in Middle Europe, were extracted a phenol and an acid fraction. From the acid fraction, two acids were obtained, of which one preserved its antibiotic properties" (p. 349). In another Czechoslovakian publication, Krejci (1961: 1351-1353) referred to two additional samples with antibiotic activity.

Sample I in Fig. 1 has been sufficiently identified as cannabidiolic acid and sample 9 as cannabidiol. Both fractions show antibiotic activity. The results of tests lead us to conclude that the antibacterial action of cannabis sativa is not identical to the hashish effect found, for example, in tetrahydrocannabinol. However, it was established that cannabis sativa is effective as an antibiotic for local infections.

Kabelik, Krejci, and Santavy (1960: 13) include in "Cannabis as a Medicant" the various microorganisms against which cannabis is effective.

Proof could be furnished that the cannabis extracts produce a very satisfactory antibacterial effect upon the following microbes: staphylococcus pyogenes aureus, steptococcus alpha haemolyticus, streptococcus beta haemolyticus, enterococcus, diplococcus pneumonia, B. anthracis, and corynebacterium diptheriae i.e., all of them gram-positive microorganisms. Noteworthy is the effect upon staphylococcus aureaus strains, which are resistant to penicillin and to other antibiotics.

These authors also mentioned that E. coli (gramnegative bacteria) were tested and found to be resistant to the cannabis extract. One of the conclusions was "the possibility of utilizing the antibiotics locally without any danger of producing resistant strains to other antibiotics administered at the same time throughout treatment" (Kabelik, et al., 1960: 13).

Veliky and Genest in "Suspension Culture of Cannabis Sativa," (1970) reported that "the ethanol extract of cultured cells exhibited antibiotic activity against Bacillus megatherium

staphlococcus aureaus and escherichia coli" (p. 493).

Other reports said that "a pronounced antibiotic effect has been observed in South America. where fresh leaves, after being ground, are used as a poultice for furuncles, and in folk medicine in Europe for treatment of erysipelas" (Kabelik, et al., 1960: 8).

This section on the -antibiotic uses of cannabis concludes with a summary of several reports from various countries. In Pharmacopee Arabe: "The ground-up seeds are mixed with bread for people with tuberculosis" (Andrews and Vinkenoog, 1967: 145). In Czechoslovakia: "A preparation from seed pulp was . . . introduced by Sirek to act as a roborant diet in treatment of tuberculosis" (Kabelik, 1960: 8). "In Southern Rhodesia the plant is used as an African remedy for malaria, anthrax, sepsis, black water fever, dysentery, blood-poisoning, tropical quinine-malarial haemoglobinuria, and a wart medicine" (Watt, 1961: 13). In Argentina:

Cannabis is considered a real panacea for tetanus, colic, gastralgia, swelling of the liver, gonorrhoea, sterility, impotency, abortion, tuberculosis of the lungs and asthma ... even the root-bark has been collected in spring, and employed as a febrifuge, tonic, for treatment of dysentery and gastralgia, either pulverized or in form of decoctions. The root when ground and applied to burns is said to relieve pain. Oil from the seeds has been frequently used even in treatment of cancer . . . (Kabelik, 1960: 8).

In 1949, Davis and Ramsey reported a study of the effect of THC on epileptic children. "The demonstration of anticonvulsant activity of the tetrahydrocannabinol (THC) congeners by laboratory tests (Loewe and Goodman, Federation Proc., 6: 3521 1947) prompted clinical trial in five institutionalized epileptic children" (David and Ramsey, 1949: 284-285). Of these five children, all had severe symptomatic grand mal epilepsy with mental retardation; three also had cerebral palsy; and three had focal seizure activity. The EEG tracings were reported to be grossly abnormal in all five children. The results after treatment with homologues of THC, were reported as follows:

Three children-responded at least as well as to previous therapy.

Fourth child-almost completely seizure free. Fifth child-entirely seizure free.

As a result of their study, David and Ramsey (1949: 284-285) felt that "the cannabinols herein reported deserve further trial in non-institutionalized epileptics."

Dr. Vansim of Edgewood Arsenal has written in a recently published book "Psychotomimetic Drugs," that the synthetic preparations of cannabis are of interest. There are three areas where they may be of definite use in medicine (Efron, 1969: 333-334). One concerns the use of a cannabis analogue which Dr. Walter S. Loewe reported very effective in preventing grand mal seizures if given in small doses.

The second use refers to cannabis as an antidepressant. Straub (Walton, 1938: 3), Adams (1942: 726-727), and Stockings (1947, 920-922) point to the possible use of cannabis and cannabis analogues in relieving dysphoria in depressed patients. Other authors (Parker and Wrigley, 1950: 278-279) had lesser success but recommended further research in this field.

A report from London in 1968 suggests that cannabis treats the symptoms and not the cause by focusing the user's attention on his anxieties and pains without helping him to resolve them (Report by the Advisory Committee, 1968: 11).

The third use is described by Douthwaite, who used hashish in 1947 "for reducing of anxiety and tension in patients with duodenal ulcer" (Pond, 1948: 279).

A report in a 1965 issue of Medical News ("Cardiac Glycocides," p. 6) suggests cannabis as treatment for a specific form of malignancy.

Cannabis is recognized as an appetite stimulant, which suggests that the drug might be useful in the treatment of pathological loss of appetite known as anorexia nervosa (Grinspoon, 1969: 21). Similar symptoms exist in terminal cancer patients who, when treated with cannabis over a short period of time, demonstrated stimulation of appetite, euphoria, increased sense of well-being, mild analgesia and an indifference to pain which reduced the need for opiates (DHEW, 1971: 11).

Cannabis has been recently proposed as an adjunct in the treatment of alcoholics and drug addicts. Roger Adams (1942: 726-727) and Todd Mikuriya (1970a: 187-191) noted that the substitution of smoked cannabis for alcohol may have rehabilitative value for certain alcoholics.

Regarding the use of cannabis analogue in the treatment of drug, alcohol and depressive state withdrawal, Thompson and Proctor (1953: 520523) report the following:

Depressive States:

20 cases of neurotic depression-4 improved (20%)

6 cases of psychotic depression-none improved (00%)

Post-Alcoholic Cases:

70 cases--59 reported clinical alleviation of symptoms (84%)

Drug Cases:

6 cases of barbiturate addiction-4 reported amelioration of symptoms (66%)

4 cases of dilaudid addiction-3 reported alleviation (75%)

2 cases of pantopan and one paregoric addiction-all reported smooth withdrawal (100%)

12 cases of Demerol addiction-10 withdrawals in one week (83%)

6 cases of morphine addiction-2 withdrawals without unpleasant symptoms (33%)

The doctors concluded that "Pyrahexyl (a synthetic cannabis-like drug) and related compounds are beneficial in the treatment of withdrawal symptoms from the use of alcohol to a marked degree, and in the treatment of withdrawal symptoms from the use of opiates to a less marked, but still significant degree" (Thompson & Proctor, 1953:520-523).

Drs. Allentuck and Bowman (1942) undertook a study of the use of marihuana in the morphine abstinence syndrome. They stated:

A series of cases were selected from among drug addicts undergoing treatment. . . .

Comparative results were chartered for the gradual withdrawal, total withdrawal, and marihuana derivative substitution, as methods of treatment. . . . 49 subjects were studied. The results in general, although still inconclusive, suggest that the marihuana substitution method ameliorated or eliminated (the symptoms) sooner, the patient was in a better frame of mind, his spirits elevated, his physical condition was more rapidly rehabilitated, and he expressed a wish to resume his occupation sooner (p. 250).

In his study of the medical application of cannabis for Mayor LaGuardia's committee, Dr. Samuel Allentuck reported "favorable results in treating withdrawal of opiate addicts with tetrahydrocannabinol (THC), a powerful purified product of the hemp plants" (Mikuriya, 1969: 38).

Roger Adams' detailed studies, as reported by Dr. C. K. Himmelsbach in his 1944 article "Treatment of the Morphine Abstinence Syndrome with a Synthetic Cannabis-Like Compound" (1944:26), indicated that "withdrawal manifestations were considered to be mild. The reported therapeutic value of marihuana was attributed to improved appetite, greater sleep, euphoria, and a reduction of the intensity or elimination of abstinence phenomena." Himmelsbach, however, had lesser success when he studied the effect of a "pyrahexyl" compound on the morphine abstinence syndrome, as noted by his conclusions that:

(1) Pyrahexyl compound appears to possess considerable cannabis-like effect when administered orally, but little or none when given intramuscularly.

(2) When given by mouth In definitely effective amounts pyrahexyl compound had no appreciable ameliorative effect on the opiate abstinence syndrome (P. 29).

The New York City Mayor LaGuardia's Committee on Marihuana (1944: 147-148) reported two possible therapeutic applications of marihuana:

The first is the typical euphoria-producing action which might be applicable in the treatment of various types of mental depression; the second is the rather unique property which results in the stimulation of appetite. In the light of this evidence and in view of the fact that there is a lack of any substantial Indication of dependence on the drug, It was reasoned that marihuana might be useful in alleviating the withdrawal symptoms in drug addicts. However, the studies here described were not sufficiently complete to establish the value of such treatment . . . .

A study was then undertaken at Riker's Island (N.Y.) Penitentiary involving 56 morphine or heroin addicted inmates. Two groups were equally matched according to age, physical condition, length and intensity of habit, etc. One group received no treatment or Magendie's solution, and the other received 15 mg. of THC and/or placebo.

"The impression was gained that those who received tetrahydrocannabinol had less severe withdrawal symptoms than those who received no treatment or who were treated with Magendie's solution" the report stated. However, the report further said that this alleged therapeutic use of marihuana should be "investigated under completely controlled conditions" before meaningful conclusions can be developed (New York City Mayor, AU: 147-148).

Some reports indicate that cannabis helps relieve labor pains. Such uses are reported among native tribes in South Africa and Southern Rhodesia: "The Suto tribe fumigates the

parturient woman to relieve pain;"the Sotho women of Basutoland "are reported as smoking cannabis to stupefy themselves during childbirth," and have also been known to "administer the ground-up achene with bread or mealiepap to a child during weaning" (Watt, 1962:13).

The use of cannabis in the treatment of leprosy has been described in a 1939 dictionary of Malayan medicine: "Seeds of Hydnocarpus anthelmintim ... form the basis of the Tai Foon Chee treatment of leprosy. After crushing and sieving, they are mixed with cannabis indica in the proportion of two parts of the seeds to one of Indian hemp" (Andrews and Vinkenoog, 1967: 146). Likewise, Watt and Breyer-Brandwijk quote Pappe that "the early colonist employed a decoction in the treatment of chronic cutaneous eruptions, possibly in leprosy (Andrews and Vinkenoog, 1967: 146).

Kabelik, Krejci, and Santavy have reported favorable results "in stornatitis aphtosa, gingivitis, and in paradentoses with a mouthwash of the following composition: Tinct. Cannabis 20.0, Tinct. Chamomillae, Tinct. jernmarum populi (or another tan for example, Tinct. Gallarum) aa 10.0 to be applied in the form of sprays or linaments to the inside of the mouth" (Kabelik et al., 1960: 13).

In reference to the use of cannabis, Chopra and Chopra (1957: 12-13) listed some preparations used in the practice of indigenous medicine in India in 1957. They summarize their article "The Use of the Cannabis Drugs in India" (1957: 12-13) by saying:

. . . with regard to the use of cannabis in Indian indigenous medicine at the present time, it may be said that It was and still is fairly extensively used in both the Ayurvedic (Hindu) and Tibbi (Mohammedan) systems of medicine as an anodyne, hypnotic, analgesic and antispasmodic, and as a remedy for external application to piles. It is also used in the treatment of dysmennorhoea, rheumatism, chronic diarrhoea of the sprue type, gonorrhoea, malaria and mental diseases on the advice of itinerant practitioners of Indigenous medicine as well as quacks who roam about the country. For medicinal purposes the drug is administered by mouth and hardly ever by smoking.

The use of cannabis drugs in indigenous medicine has greatly declined during recent years for two reasons-firstly, because of the rapid deterioration of the potency of cannabis drugs in storage, the specimens available on the market being often Inert and quite useless; secondly, because a number of potent and effective drugs of the type used In western medicine are now available on the market and are used quite extensively by the practitioners of indigenous medicine in place of cannabis, for the anodyne, sedative and hypnotic effects. In the rural areas of India, however, the practitioners of indigenous medicine still use cannabis quite extensively In their practice.

The same article lists a variety of uses in which cannabis is employed therapeutically in veterinary medicine.

Dr. R. N. Chopra (1940: 361) reports the following medicinal household uses of Indian Hemp:

The hemp drugs are popularly used as household remedies in the amelioration of many minor ailments. A mild beverage made from bhang leaves is believed to sharpen appetite and to help digestion. Indian hemp Is commonly used as a smoke and as a drink for its supposed prophylactic value against marihuana in malarious tracts. Bhang beverages form one of the popular household remedies for gonorrhoea and dysuria. On account of their mild diuretic and sedative properties these drinks probably give a certain amount of

symptomatic relief. Likewise, the use of bhang for dysmenorrhea, asthma, and other spasmodic conditions is not uncommon. A poultice made from fresh leaves is a common household remedy for painful affections of the eyes, conjunctivitis, swollen joints, orchitis, and other acute inflammatory conditions.

Tuberculosis, anthrax, tetanus, and menstrual cramps are among the miscellaneous medical uses of cannabis reported. Reports from Mexico indicate the use of marihuana smoking "to relax and to endure heat and fatigue" (Mikuriya, 1969: 37).

Kabelik et al. (1960: 13) also discuss other varied uses of cannabis.

In human therapy the best results have been obtained with the following medicaments combined with substances derived from cannabis: dusting powder together with boric acid (otitis), ointment (staphylococcus infected wounds, staphylodermia and so on), ear drops (otitis chron.), alcohol solutions with glycerine (treatment of rhagades on the nipples of nursing women-prevention of staphylococcic mastitis,) aqueous emulsions (sinusitis), dentin powder with the IRC (Isolated Resin from Cannabis) (caries). The preparations mentioned above have been already tested clinically, and will eventually be made available for production. . . . the experiments made in clinical practice, particularly in stomatology, otorhinolaryngology, gynecology, dermatology, phisiology, with some pharmaceutical preparations containing antibacterial substances from cannabis have been reported. Attention has been drawn to the advantageous utilization of the active substances from cannabis in veterinary medicine, and particularly in preventive medicine for anthropozoonoses.

Murphy (1963: 20) refers to an article by Lang, "Treatment of Acute Appendicitis with a Mixture of Ma Jen," which says "the drug has apparently been used in China for the treatment of appendicitis." The Xosa tribe in South Africa "employs it for treatment of inflammation of the feet" (Kabelik et al., 1960: 7), while the Mfengu and Hottentot use the plant as a snake-bite remedy (Watt, 1962: 13).

Other therapeutic uses attributed to marihuana are for the treatment of migraine headaches, as an analgesic, and as a hypnotic. Hollister (1971: 28) stated that "other uses which have been proposed for marihuana include the treatment of epilepsy, as prophylaxis for attacks of migraine or facial neuralgia, or as a sexual stimulant."

National Commission on Marihuana and Drug Abuse

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Marihuana: A Signal of Misunderstanding

The Technical Papers of the First Report of the National Commission on Marihuana and Drug Abuse March, 1972

Preface

Congress created the Commission on Marihuana and Drug Abuse to separate fact from fiction, reality from myth, and to achieve a balanced judgment on the marihuana issue. The first report of the Commission is an attempt to clarify the essential issues and concerns of our society regarding marihuana and to extrapolate our findings and conclusions into a reasonable societal response.

In an effort to present these complex issues with a maximum of clarity, comprehension, and readability, the Commission Report does not include references. This Appendix, however, fully documents the methodological and substantive, issues presented in the Report. In addition to the technical data, the Appendix also contains the historical and philosophical matrix of the Report.

The papers of the Appendix are divided into six major parts. Part One deals with the biosocial aspects which relate to marihuana's effect on individuals as well as to the larger society.

It includes an historical survey of two types of marihuana use, medicinal and intoxicant, which constitutes a review of marihuana use in many parts of the world. An analysis of the accepted sociocultural parameters helps to put the American marihuana, user into perspective.

Part One also presents detailed and current reviews of the botanical, psychopharmacologic, physiologic, and behavioral effects of marihuana on man.

Part Two, the social aspects of marihuana use, discusses patterns of the individual user as well as the relationship of marihuana use to violent and non-violent crime.

One of the most controversial issues in the study of marihuana is its relationship to other drugs. The second chapter of Part Two deals specifically with this issue and explores, in depth and with careful consideration, the hypothesis that marihuana use leads to other drugs, especially heroin.

Part Three is concerned with the legal aspects of the marihuana controversy. In order to place marihuana, a psychoactive drug, in proper perspective, a history of the control of marihuana, alcohol and tobacco is presented.

This section of the Appendix also reviews the current marihuana laws at the international, federal and state levels including statutes that require physicians to report drug addiction. The section concludes with a description of trafficking and distribution patterns of the drug.

Part Four, the response of the criminal justice system, analyzes law enforcement behavior

with respect to marihuana use. The relationship between the opinions held by officials in the criminal justice system and their behavior toward marihuana offenders is also discussed.

Part Five presents the findings of the Commission-sponsored National Survey of public attitudes and behavior toward marihuana, other drug use and related social issues.

Part Six discusses the marihuana issue with respect to sociolegal policy practices and decisions. Included in the section is a discussion of the constitutional dimensions which form the basis for alternative models for the control of marihuana. A nationwide study of marihuana education presents policies and programs on a state-by-state basis and includes descriptions of ongoing marihuana education programs.

The Appendix concludes with a presentation of future research recommendations as suggested guidelines for various agencies, institutions and individuals engaged in research on marihuana.

Each of the papers contained herein represents the composite effort of the Commission members and staff, consultants, contractors and youth consultants.

Of necessity, space limitations precluded the publication in full of many excellent papers; many works are presented either in abridged form or integrated into the Commission's own presentation.

A list of all papers submitted to the Commission is presented at the conclusion of the Appendix. Should any reader wish to obtain a copy of a particular work, the request should be sent directly to the author and not to the Commission.

Factors Influencing Psychopharmacological Effect

A renewed interest in marihuana studies has been prompted by the recent clarification of the complexities of its chemistry, new techniques to quantity the amounts of active drug in natural materials, and the availability of purified tetrahydrocannabinols. These advances allow more precise scientific research on psychiopharmacological effect.

DOSE-RESPONSE RELATIONSHIP

A major advance has been a quantification of dose of THC in relation to clinically observable phenomena. This has been extensively studied over a wide dose range for marihuana (Rodin and Domino, 1970; Melges et al., 1970; Tinklenberg et al., 197O; Weil et al., 1968; Meyer et al., 1971; Clark and Nakashima, 1968; Clark et al., 1970; Jones and Stone, 1970; Mayor's Committee, 1944; Manno et al., 1970) and Delta 9 tetrahydrocannabinol (Isbell et al., 1967; Waskow et al., 1970; Hollister et al., 1968; Perez-Reyes and Lipton, 1971; Lemberger et -al., 1971; Dornbush and Freedman, 1971).

Investigations by Isbell et al. (1967), Kiplinger et al. (1971) and Renault et al. (1971) have clearly demonstrated that when reliable quantities of smoked marihuana or THC are delivered to the subject, a reproducible linear dose-dependent effect occurs on indices of physiologic, psychomotor, and mental performance as well as on mood and subjective experiences over a dose range of 12.50 to 200 micrograms of Delta 9 THC per kilogram of body weight.

In a 154 pound man this is comparable to consuming 0.88 to 17.5 milligrams of Delta 9 THC or 88 to 150 milligrams of marihuana containing one percent Delta 9 THC. It is generally assumed that good quality marihuana available in the United States contains 1% Delta 9 THC and an average marihuana cigarette consists of 500 milligrams of marihuana; thus, 5 milligrams of Delta 9 THC (Hollister, 1971).

As with most drugs, the larger the dose taken, the greater the psychopharmacologic effect. Isbell et al. (1967) noted that clinical syndromes vary from a mild euphoric feeling of relaxation at low doses (25 micrograms per kilogram) to an intensive hallucinogenic-like experience at high doses (250 micrograms per kilogram).

DOSE-TIME RELATIONSHIP

Similar time-action curves have been demonstrated for smoked Delta 9 THC and equivalent quantities of smoked marihuana (Hollister et al.,1968; Isbell et al., 1967 Renault et ai., 1971 Kiplinger et al., 1971). Symptoms began almost immediately after smoking (2-3 minutes). At lower doses, the peak effect is seen at 10 to 20 minutes and the duration of effect is 90 minutes to two hours. At higher doses, symptoms persist for three to four hours.

Therefore, as with most drugs, the larger the dose taken, the longer the action. The subjective symptoms experienced by the subject appear to parallel in time the subjective effects and some physiological indices such as pulse rate (Isbell et al., 1967; Hollister, 1968 - Renault and Schuster, 1971; Kiplinger et al., 1971; Galanter et al., 1972; Lemberger et al., 1971). Others such as reddening of the eyes have a delayed peak response and longer duration (Kiplinger et al., 1971).

ROUTE OF ADMINISTRATION

A second factor which influences the effect experienced by the user is the manner in which the substance is consumed. That is, whether it is smoked, swallowed or injected.

Isbell et al. (1967) demonstrated that smoked material is two and a half to three times as effective as orally consumed marihuana in the form of a 95% ethanolic solution in producing equivalent physiologic and subjective effects.

In addition, the oral time-action curve is extended with onset of symptoms one-half to one hour after administration. A peak effect is reached in two to three hours and the effect persists for three to five hours at low doses and six to eight hours at larger doses (Hollister et al., 1968; Isbell, et -al., 1967; Lemberger et al. 1971; Perez-Reyes, and Lipton, 1971).

In general, the effects produced by ingested THC or ingested marihuana extract are comparable to those produced by nearly one-third the amount of smoked and inhaled THC or marihuana (Hollister, 1971).

Recent work has been reported which clarifies these findings. Lemberger et a]. (1971) studied absorption into the blood utilizing radioactive labeled THC by three routes of administration: smoked, ingested in 95% ethanolic solution in cherry syrup, and intravenously injected. The first appearance of the drug into the, blood was immediate intravenously; almost immediate, by inhalation; and delayed for 15 to 30 minutes when ingested.

Perez-Reyes and Lipton (1971) using labeled AO THC demonstrated that rate of absorption by the gastrointestinal tract, and the duration of action is greatly influenced by the vehicle used to ingest the drug. Speed and completeness of absorption varied when the THC was dissolved in 100% ethanol or sesame oil or emulsified with a bile salt (sodium glycocholate), and administered to a subject who had fasted 12 hours. With the bile salt vehicle, the physiologic and subjective effects were noted between 15 to 30 minutes after ingestion and lasted two to three hours. In contrast, the effects, with ethanol or sesame oil, appeared after one ,hour and lasted four to six hours.

Hollister and Gillespie (1970) hypothesized that this delayed gastrointestinal absorption of THC might be accounted for by the nonpolar vehicle required to dissolve TUC or marihuana extracts.

Furthermore, Perez-Reyes and Lipton (1971) found that the peak levels and duration of radioactivity in the plasma paralleled the physiologic and subjective effects, although the plasma levels remained high for a longer period of time than the effect. Subjects receiving the drug emulsified in sodium glycocholate or dissolved in sesame oil had three times

higher plasma levels of radioactivity with much less excreted in the feces than those receiving the drug dissolved in ethanol.

These results indicate that the THC was poorly absorbed from the gastrointestinal tract when given in all alcoholic solution. The sesame oil solution and the glycocholic acid preparation allowed more complete absorption and the latter preparation was much faster. It is of interest that the degree of subjective high after ingestion of 37 milligrams Delta 9 THC also parallels the plasma radioactivity.

Thus, the subjects reported their experience, as intense and unpleasant both with the bile salt and the sesame oil, and as moderate and entirely pleasant with ethanol. (Perez-Reyes and Lipton, 1971) This correlates well with earlier findings of Hollister et a]. (1968).

QUANTIFICATION OF DOSE DELIVERED

The problem in quantifying the THC dose delivered by different routes of administration has been clarified by several studies using radioactive compounds. However, until a method for determining the THC blood concentration is developed, only estimates oil amount delivered are possible.

Radioautographic studies clearly demonstrate that intravenous injection gives the, most complete and consistent delivery (Lemberger et a]., 1971; Me Isaac et M., 1971; Ho et a]., 1971; Kennedy and Waddell, 1971; Idanpaan-Heikkila, 1971). These investigators have demonstrated that THC is poorly absorbed from the injection site after intraperitoneal or subcutaneous injection.

As discussed earlier, the completeness of absorption ocurring after oral administration of THC appears to depend upon the vehicle. Judged by radioactivity levels, almost complete absorption of the THC occurs with an oil or bile acid vehicle, but absorption is incomplete with an alcohol vehicle. (Perez-Reyes et al., 1971)

Recent animal studies performed for NIMH indicated that the oral dose necessary to produce comparable gross behavioral changes in lab animals is about three times higher than the intravenous dose (Marihuana and Health. 1971: 171). Ferraro (1971) demonstrated the comparability of effective oral doses of THC in chimpanzees and humans. Furthermore, preliminary work performed in the laboratories of M. Isaac (1971) and Harris (1971) and Mechoulam (1971) appear to indicate that the intravenously administered dose of Delta 9 THC necessary to produce detectable behavioral changes in monkeys (20 to 50 microgram/ kg) on conditioned learning tasks is comparable to that in man. (Kiplinger et a]., 1971; Lemberger et al., 1971).

The dose of THC absorbed from natural marihuana extracts ingested orally is uncertain. THC is present as an acid in variable quantities in natural marihuana. THC acid has not presently been proven to be active. Claussen and Korte (1968) reported that the THC carboxylic acid is converted to free THC during the smoking process. Whether these, acids are active themselves; are absorbed from the gastrointestinal tract or converted there into THC; or are decarboxylated in the, body is unknown presently.

Because inhalation is the most widely used route of administration of marihuana, several

laboratories have investigated the effect of combustion and smoking oil marihuana. Because techniques and conditions varied between laboratories, precise quantification of the delivery to the smoker's lungs is uncertain.

Manno, et al. (1970) calculated that about 50% of the THC contained in a marihuana cigarette would be delivered to the smoker's lungs for absorption if the entire cigarette were smoked in 10 minutes and each inhalation was retained for 30 seconds with no sidestream loss. Truitt (1971) and co-workers (Foltz et al., 1971) found that 50%c of THC was pyrolyzed and 6% was lost in the side stream while noting that almost 21% of the THC remained in the butt when three-fourths of the cigarette is consumed.

Agurell and Leander (1971) studied the transfer of THC using actual smoking subjects where only the main stream smoke was collected. They found that 14-29%% of the THC was transferred in the mainstream smoke for a cigarette and 45% for a pipe. However, they stated that this amount transferred would be comparable if no butt was left.

Agurell and Leander found that the amount transferred was not effected by depth of inhalation but that smokers using deep inhalation retained 80% of the transferred THC while those using superficial inhalation tended to exhale more than 20% of the transferred THC. Mikes and Waser (1971) also found about 22% in the mainstream smoke.

These divergent data appear to be comparable when corrected for loss to sidestream and retention in the unsmoked portion. Thus, the efficiency of delivery of THC by smoking and inhalation using good techniques, and smoking the entire cigarette approximates 40-50% of the original THC contained. A small fraction is lost in the uninhaled sidestream smoke, about 50% is destroyed during pyrolysis and a variable amount is exhaled from the respiratory dead space.

In apparent confirmation, Lemberger et al. (1971, 1972), using radiolabeled THC added to a marihuana cigarette, found that the initial plasma level of radioactivity after smoking was about onehalf the level after intravenous injection. Oral administration of the same dose of THC in an alcohol vehicle produced about one-half the peak level as smoking. However, Galanter et al. (1972) noted marked variability in the amount of THC absorbed using a standardized routine of inhaling, breath-holding and finishing the cigarette within a set time period.

EFFECT OF PYROLYSIS ON THE CANNABINOIDS

Several investigators have studied the effect of pyrolysis on the cannabinoids. Most have concluded that only negligible changes occur in the original cannabinoid fraction of marihuana except for decarboxylation of the acids to the cannabinoids. No evidence was found for isomerization of Delta 9 THC or Delta 8 THC nor the formation of any new pyrolysis products (Manno et al., 1970; Coutselinis & Miras, 1970; Claussen and Korte, 1968; Foltz et al., 1971; Agurell and Leander, 1971). Mikes and Waser (1971) suggested that a small percentage of cannabidiol was converted to Delta 9 THC, but this observation was not confirmed by the other groups.

Coutselinis and Miras (1970) noted that less THC was destroyed during smoking when Delta 9 THC was the only cannabinoid present rather than when a resin or a mixture of cannabinoids were present. This was believed to be at least partially accounted for by the distribution of THC in the cigarette. More destruction occurred when the THC was evenly

distributed in the cigarette than when it was present in a well-defined lump.

SET AND SETTING

A most important variable encountered when evaluating the effect of marihuana is the interaction of the drug with the non-drug factors, set and setting. Set refers to the drug-taker's biological make-up including personality, past drug experiences, personal expectations of drug effect, and mood at the time of the drug experience. Setting refers to the external surroundings and social context in which the individual takes the drug. Set and setting exert their largest effect on psychoactive drugs, like marihuana, with subtle subjective mental effect and minimal physiological effect. Set and setting exert a variable but often marked influence on the potential drug effects (Waskow et al., 1970; Wickler, 1970).

The results of a series of experiments by Jones (1971) suggests the subjective state produced by "a socially relevant dose of smoked marihuana.... 9mg THC" is determined more by set and setting than by the THC content of the marihuana.

In one experiment, a greater variety and more intense pleasurable symptoms occurred in a fourman group allowing unstructured interpersonal interaction than in unstructured solitary test situations. Contrasting behavioral patterns were observed by the investigator and reported subjectively by the individuals. Subjects tested individually demonstrated a relaxed, slightly drowsy, undramatic state as they read, listened to the radio, or sit doing nothing. In the group setting there was elation, euphoria, uncontrolled laughter, a marked lack of sedation and much conversation. (Jones, 1971)

This strongly emphasizes the importance of setting in the marihuana experience. The reason is apparent why marihuana is usually used with other people. However, most investigators studying its effects evaluate their subjects alone, in well-controlled, sterile, scientific laboratories.

The importance of the placebo effect (the subject experiences a drug effect from an inert material) to the "social high" obtained from marihuana was studied in another experiment (Jones and stone, 1970; Jones, 1971). Misjudgments of the pharmacologic potency of both the smoked placebo (marihuana without THC) and active marihuana were commonly made by the subjects although physiologic and performance indices routinely matched the distinction correctly. The smoking of a material that smells and tastes like marihuana by individuals with marihuana experience appeared to produce a mental state that is interpreted as being high if combined with the expectation of becoming high.

The importance of learning to get high was demonstrated when individuals who smoked marihuana less than twice a month were compared with those who used marihuana at least seven times a week. Although both groups rated the active marihuana equally potent, the frequent users rated the placebo equally to the active drug, while the infrequent users experienced significantly less high from the placebo.

The infrequent users' experiences appears to reflect mainly pharmacologic factors with moderate set-setting influence. However, the frequent users' response to the placebo appears to reflect mainly learned set-setting influence and minimal pharmacologic factors. (Jones, 1971)

Smith and Mehl (1970) call learning to get high " reverse tolerance." During the early exposures to marihuana the individual learns to appreciate the subtle drug effect with repeated experience with the drug. Consequently, less drug may be required to experience

the desired high in the early stages of marihuana use.

Further evidence for this is seen when the familiar smoking route and smell and taste cues are made ineffective by giving the active and inactive material by the oral route (Jones and Stone, 1970). Both groups of users can significantly distinguish the intoxication produced by 25mg of active material. But the frequent user rates this high significantly poorer than his smoking high while the infrequent user rates them correctly.

TOLERANCE

The development of tolerance is another important factor that may influence the psychophysiological effects of marihuana. Although tolerance occurs with many drugs and the process has been studied for over a century, the mechanism of this complex phenomenon is not completely known. Kalant et a]., (1971) have extensively discussed tolerance to the psychotropic drugs.

Tolerance has two different connotations. The first, termed "initial tolerance," is an expression of the dose of the drug which the subject must receive at his first exposure to produce a designated degree of effect. These authors state that a variety of congenital and environmental factors contribute to the wide range of differences in "initial tolerance" observed among different individuals, sexes, species, age groups and so on.

The second meaning of tolerance is that of an "acquired change in tolerance" within the same individual as a result of repeated drug exposures so that an increased drug dose is required to produce the same specified degree of effect, or the same dose produces less effect. In this chapter, tolerance will be used synonymously with "acquired increase in tolerance." -Tolerance can only be discussed for each specific drug action and not for all the actions of a given drug on the body. That is, tolerance occurs at different rates for some of the various effects of the same drug on the body and may not occur for other effects of the same drug. The relationship between "initial tolerance" and "acquired change in tolerance" has not been clearly established.

There are two classes of tolerance based on possible mechanisms. The first, dispositional tolerance refers to changes in absorption, distribution, excretion and metabolism which produce a reduction in the intensity and duration of contact between the drug and the target tissue on which it acts.

The second, functional tolerance includes changes in the properties and functions of the target tissue making it less sensitive to the same dose of the drug. Physiological tolerance implies a change in the target organ while psychological or "learned tolerance" implies the acquisition of new skills or functions to replace those changed in the target tissue (Kalant et al., 1971).

Considerable evidence is accumulating which demonstrates that tolerance does develop in numerous animal species (pigeons, rats, dogs, monkeys, chimpanzees, mice) to the behavioral and physiological effects of marihuana and THC in doses many times larger (from 1 mg. to 500 mg./ kg/day) than the minimal active dose (Carlini, 1968; Silva et al., 1968; McMillan et al., 1970, 1971; Frankenheim et al., 1971; Carlini et al., 1970; Thompson et al., 1971; Pirch et al., 1972; Ferraro, 1971; Elsinore, 1970; Cole et al., 1971).

Lipparini et al. (1969) were not able to demonstrate tolerance in the rabbit.