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ALCOHOL

FACTS

Behind the

RUMORS

Behind the

MYTHS



A 'DO IT NOW FOUNDATION' PUBLICATION
ON CHEMICAL SURVIVAL

BY DAN FRAZIER AND VIC PAWLAK
& THE DO IT NOW FOUNDATION RESEARCH STAFF



ALCOHOL: FACTS BEHIND THE RUMORS BEHIND THE MYTHS

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FOREWORD

You have just started reading a unique book. It is unique because it is not another depressing work on the hopelessness of the alcoholism problem. In fact, this book is not primarily on alcoholism at all. It is, rather, an in-depth look at alcohol as a drug, and its similarities to other drugs that cause similar problems.

One of the problems of over-use of this drug is of course alcoholism. But this is only one of many possible things that can happen. In light amounts, alcohol can cause vitamin deficiencies, and in moderate amounts other problems can start to happen . . . ending with such commonly known maladies as cirrhosis of the liver.

All that is associated with alcohol is not gloomy, however, and that is another reason for this book. The latest Congressional report on Alcohol in 1975 shows that, contrary to what we have been told, light drinkers tend to live longer than total abstainers. (Although so many people tend to over-drink that for them abstention is the only way.) Also, before you jump to conclusions on this one you should know that it has yet to be substantiated by follow-up studies.

In 1975, a French physician wrote a book on the medicinal effects of wine, pointing out that concentrations of various vitamins and minerals could be used for everything from the common cold to obesity. Many of these claims have yet to be proven, but at least some seem quite valid. On the other hand, the wines we most commonly drink in America may acutely give us these same problems.

Does all this sound complicated? It's true — because alcohol is a complicated, often confusing chemical. We hope that in this book we have managed to put it into better perspective for all of us.

ABOUT THE AUTHORS

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Other Do It Now staff members helped greatly in compiling the information in this book. Special thanks go to Joe Axton and Nancy Gray and to our library staff for all their help. Many thanks also to countless professional sources who helped with the pharmacological data.

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INTRODUCTION: ALCOHOL — YOUR GUT-LEVEL FEELINGS

Have you ever thought for a long time about alcohol? Probably not, because few of us have. Usually, our first introductions to this chemical come about in ways that make us prejudiced for or against at least certain aspects of it. This is why you must exert your head a bit to ask yourself: How did my attitudes about alcohol develop, and what do I really think?

If by chance your first introduction was based on a drunken father (or mother, or uncle, etc.) you may have a pretty good idea of what someone looks like when they are drunk, and how the logic and speech patterns change. If this was a heavier incident with an alcoholic parent or a real problem drinker, it may have been accompanied by violence either towards you or the other parent. Now, many people have had this happen as kids. They tend to usually do one of two things:

1.) You feel sorry for that person, observe the effects alcohol has on him, and as you get older you drink more moderately, or

2.) You build a correlation between alcohol and escape. Although you know in fact that alcohol won't make problems any better, you incorporate it into your lifestyle later to avoid decision making, etc.

Of course, not everyone has an alcoholic parent or close family member. But sooner or later, you run into it. One normal way for kids to observe alcohol in action is at festive occasions such as weddings, christenings, and the like. This may actually be healthy in the long run, because at a really heavy celebration you get to see everything at once . . . people drinking and being friendly, heavy drinking and maybe even some fighting, and then some of the passing out in the back room, getting sick from over-indulging, and so on. One good old-fashioned wedding can give a kid two or three years worth of experience on the subject and save him or her from having to do it by trial and error. Usually the grown-ups even let the kids taste some of the alcohol, the typical reaction being frowns, stuck-out tongues and "yucchh" in general. Maybe you first learned about alcohol in this way, before you actually took your first drink on your own. Many of us did.

Maybe, on the other hand, you've grown up in a big city where the chances of running into drunks and winos on the streets are even better. No doubt your first reaction was total disgust. But unfortunately in many big cities, particularly in lower economic areas, jobs are hard to get, it's a repressive environment in general and drinking to escape reality is really tempting. Of course, heavy drinking and the use of certain downer drugs (particularly heroin, barbiturates and even inhaling of spray paint, etc.) is part of what makes the whole thing so repressive and depressing . . . everywhere you go the people, and the world, look totally downed out and it's a big temptation to join them. Maybe this happened to you.

Or maybe your parents were total abstainers for some reason . . . natural abstainers, temperance people or non-drinkers for religious reasons. Many parents who don't drink at all fail to understand kids' curiosity about the subject, and when the kids ask questions they respond with moral reasons that are not yet quite "logical" to them. Or if morality is not the question, many parents who don't really know a lot about alcohol themselves take the stand: "You can't drink because I say you can't." Even parents who occasionally drink often take this stand.

This latter attitude is disgusting, since it imparts no information on the subject, and makes kids curious. If your parents were like this, you may have developed a good attitude about alcohol from someone else, or on your own, or through school (though there haven't been many good school education programs on alcohol until recent years). Or, more likely, your knowledge has come about through trial-and-error, drinking after a football game and cruising around town, getting your beer or your Vodka or Whisky by having the oldest-looking kid go in and buy it. You probably sweated it out hoping your parents wouldn't spot you when you came home, or have the police stop you when you were driving. If you got caught sooner or later, you probably had to sweat out a lecture that amounted either to "How can you do this to me?" or "If I ever catch you drinking again, so help me . . ."

Curiously enough, there is some evidence to suggest that both parents who are alcoholics and parents who are abstainers for moral reasons (who do not point out pharmacological dangers and factual evidence to their kids) tend to have kids who are more often either heavy drinkers or almost total abstainers. Many parents forget that their moral rationale is not necessarily "inherited" by their offspring, and that if



their ideas do not make sense to their kids they will eventually be rejected, even if this does not always happen until high school age or older. That first drink, if they take it, is always the deciding point.

There are many parallels between alcohol and other drugs which are commonly used today. For example, kids are often told by parents that marijuana is a killer weed that will do horrible things to them and turn them into junkies. When that kid smokes his first joint, he feels slightly high, he notices no craving for anything else or even more of the same (at least on a compulsive basis, although with any pleasurable drug or non-drug experience there may always be an eventual desire to feel good again) and the overwhelming fact which occurs to him is that he has been lied to. Saying things that are grossly untrue about alcohol, or things that cannot be proven, can cause the same thing to happen.

The point we are trying to make is that in your life there have probably been many subtle or major influences that make you think what you do about alcohol. You are tired of people trying to tell you about the "overwhelming problem of alcoholism" as if you had any trouble to begin with in that area. (We'll get to that later.) If you are in any way normal, you should resent anybody telling you how to think, whether you are 15 or 50, especially things you do not consider a problem. If you are in school and living at home, at least part of what we have just said may be what you are going through. If you are a parent (or planning on it) you must realize that your attitudes, in some way, were shaped by your parents, and the things you saw and did when you were a kid. Regarding alcohol, unlike other drugs, nothing has changed significantly in the last 30 years, except that more people than ever before are drinking.

So if we can impose on you just briefly, why not try to go through these things in your head:

1.) Where did your attitudes about alcohol really come from? Try to pick out examples that influenced your thinking. Try to remember your first taste, your first thoughts, what your parents and relatives said to you and whether you accepted their words or rejected them. If you rejected them, do you remember why?

2.) Examine your motives and pattern of drinking today. Do you drink for any "escape" reasons? Have you noticed that alcohol soothes your nerves or helps you sleep better? Does it ever help you make friends and be sociable, such as at a party? Can you find any pattern to your drinking and pick out any reasons?

3.) Separate your morals from your real knowledge about alcohol as a drug. How much do you really know? Do you know how alcohol affects the central nervous system? Do you even know how it works? Do you know about at least some of the dangers of mixing other drugs such as sleeping pills? Good, that's a start. Do you know how to tell the difference between someone "sleeping it off" and someone who has overdosed and could be in danger? Do you know what to do with a person who has passed out so that there is no danger of them dying in their sleep, even if they have not overdosed?

4.) Come on now, be honest. When you look at a bottle of alcohol, what do you see? Do you see a drug, comparable to other drugs in many ways, or is what you first see a social or emotional phenomenon? Do you look at that bottle and see an easy way to relax? Do you see something that your friends will love you for if you offer it to them? Do you see something that would cause a minor panic if you ran out of

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it? Do you see a brand name label that looks good because you've seen it advertised so much in respected magazines? What exactly comes to mind first? Whatever it is, the fact that you are looking at a drug should come first, and any other thing second. If "drug" is your first gut-level reaction, or you can somehow make it the first reaction, you are on the right track.

LEARNING HOW TO DRINK

In many Arab countries, alcohol is against the Moslem religion and it is either not allowed in the country, or is allowed for foreigners only. In a few Indian states, primarily for religious reasons, there is what appears to be an almost effective prohibition of this substance. But in literally every other country in the world it is readily available.

We may as well face it; if prohibition in America taught us anything it is that alcohol is not going to go away, so we'd better face up to it and teach people how to drink in moderation and get away with it with as little damage as possible.

The problem is that we know too much. It does not take any technological genius to create alcohol. With a few simple ingredients anyone can make a bathtub of beer, or let a gallon of fresh grape juice ferment. It's a lot more dangerous to make hard liquor, but how many times have you heard of someone who has built a backyard still? This is the kind of stuff you can adapt from what you learn in high school science. One of the prohibition problems was that it was the science drop-outs, not the knowledgeable ones, who made bathtub Gin and often caused poisonings, blindness and other major problems for illicit consumers who would buy anything.

HOW TO DRINK AND GET AWAY WITH IT

As you will read later on, scientists who do alcohol research disagree regarding how much alcohol is too much. The more fanatical ones insist that damage starts at any amount. But in general the consensus is that if you take in under two to three ounces of absolute alcohol in any one day you are a lot safer.

Just how much is this really? Well, three ounces is the equivalent of seven ounces of 80 proof liquor (40% alcohol). Or, it is slightly more than 1½ quarts of 6% beer. In wine, a natural 13% alcohol wine comes out to about 23 ounces, or 2/3 of a quart. "Unnatural" wines in which alcohol is artificially added (usually upping it to 20%) would be about 15 ounces.

All alcohol is not alike. For various reasons that are mentioned throughout this book, consumption of beer varies from wine which varies from hard spirits. There are actually some good things to be said for some of the properties of beer and wine besides the alcohol property in some cases, but this is not true with hard spirits. For example, just about the only good thing you get from a Gin tonic is the value of the tonic water.

We don't have to tell you that alcohol is all around you. You can see the evidence everywhere. The signs "Cocktail Lounge," "Bar and Grill" and "Liquor Store" are etched on everyone's mind as probably the most common sights in this country, not to mention used alcohol containers strewn across the country.

Everyone is pushing alcohol on top of this. The first waiter or waitress you often see in a restaurant is someone asking you what you'd like from the bar. In many smaller

communities, there are only two focal points of social activity: the church and the bar. Many people aren't all that religious. On television or in movies you see John Wayne, Clint Eastwood and other actors downing three or four drinks of straight rotgut and then going out to slaughter Indians or gangsters, depending on the era. "Would you like a drink?" is probably the most frequently remembered opening line from conversations in television and the cinema.

Even in high school there are generally two things to do with a Saturday night: Go out on a date or to a party and drink, or hang around with your friends and drink (or use other substances, but that is another book). The added danger of this of course is the illegality of young people being under age, which generally adds paranoia of parents and police to the whole affair.

But for the purposes of this chapter let's assume that you're drinking legally, and that you have a reasonably open mind about alcohol. What can you do to make the whole thing safer?

1. First of all, use common sense even if it sounds corny or causes a protest from your friends. The obvious one is driving. If you're lucky you will have one non-drinker in your group who can take you home, if you're at a bar or a public place. If you're at a party, be prepared to spend the night there if you get too smashed. Part of a host/hostess' planning for a party should include either provisions for some smashed people to stay overnight, or arranging beforehand to make sure that someone sober will have a car. It may seem manly (for some reason men have this problem a lot more than women) to prove that you can drive while loaded, but all it proves is that you are willing to risk your life (and the lives of persons you hit) for nothing. Remember that alcohol tends to distort things a bit, including the facts that you think your head is clear when it isn't.

2. Drink slowly. If you are planning to get yourself smashed, it can be attained just as effectively on a lower level with resulting less harm to your body afterwards. The reason is that it takes awhile for your system to start absorbing the alcohol, and for this information to get to your brain. You will get just as loaded on four slow drinks as you will on six fast ones, assuming of course that you are not going to stay awake for more than four hours. You will also have

less of a hangover.

3. Try to assess the reason for your drinking before you start. Social drinking is only one reason people imbibe. Are you drinking to get rid of a headache, get rid of a depression, or because you are lonely? Remember that the drug you are using may be unnecessarily strong. Believe it or not, there are some junkies who shoot up heroin to cure a headache. (The old killing-a-fly-with-a-sledge-hammer approach.) Try an aspirin first. If you are depressed, alcohol's tendency to imbalance the biochemical system of your body will eventually make you more depressed the next time around. If you are lonely, being drunk and sloppy will not make you any more attractive to the opposite sex. If you drink to make you sleepy, you should be aware of the fact that alcohol, as well as other downers, builds up tolerance so that after a week or so you can't get to sleep without it (i.e. insomnia).

4. If you are drinking socially and want to get a buzz on without becoming unnecessarily smashed, start turning down every other drink, or sip slowly. Insistent people will usually not be so insistent that you have another drink if there is something left in your glass.

5. If you are far away from home or you are the driver, you owe it to your friends to consider abstaining altogether when you go into a bar. Besides this, for reasons of general health you should not be afraid to drink something non-alcoholic. In the drug culture it is just as hip and accepted to pass a joint on to someone else without smoking it as it is to take a toke. Adapt this to your thinking about alcohol; sometimes, for reasons that are entirely your own business, you should be allowed to refuse a drink in peace. If you are a tourist in a strange town this tactic may have side benefits... you'll be in control of the situation while your friends are falling on the floor getting their pockets picked.

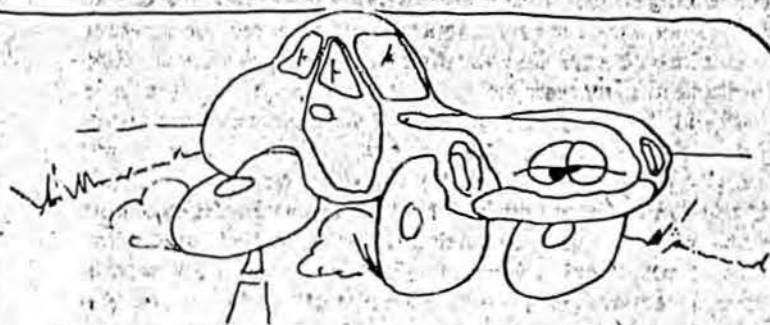
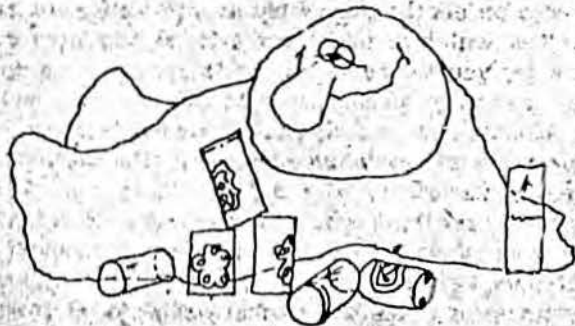
6. Remember that the word "alcoholism" never seems real until you are already there. As almost everyone knows, if you use barbiturates or Heroin every day you'll get strung out. Break up the pattern and it's almost impossible. You should treat alcohol with the same respect you would give other drugs. If you find yourself drinking a couple of drinks every night, break it up as much as possible to every other night or only a couple of times a week. If you have two beers with

Courtesy U. S. Jaycee

DRINKING MYTHS:

"YA GOTTA HAND IT TO JOE. HE CAN REALLY HOLD HIS LIQUOR."

Don't envy Joe. Often the guy who can hold so much is developing a "tolerance" for alcohol. And tolerance can be a polite word for need.



"I DRIVE BETTER AFTER A FEW DRINKS."

In most states, the legal definition of "driving under the influence" is a blood alcohol level of 0.10%. But scientific tests have proved that even professional drivers' abilities diminish sharply at levels as low as 0.03% to 0.05%... just a few drinks. Not only that, but judgment is affected, too. So people think they're driving better than ever while they're really driving worse.

your lunch every day, start an on-and-off pattern with other non-alcoholic things. It doesn't take much to start you off on a heavy addiction, just regularity. The other things you read about, uncontrollable drinking and heavy compulsive use, are real problems later on for certain people. You may or may not be one of them. Fortunately you will never know if it doesn't get out of hand and into a regular pattern in the first place.

BOREDOM AND DRINKING

Probably the heaviest thing to overcome is drinking because you are bored. At this particular time in history people are using more "downer" chemicals than ever before. This is due to many factors . . . including the economic one, which means that unemployed people have a lot of time on their hands. In addition, with fuel and transportation costs skyrocketing, that weekend vacation to the country or a visit to out of town friends may be too expensive much of the time. So people are sitting around watching reruns on television and getting bored. It seems like it's a whole lot easier to watch those reruns with a couple of six-packs, doesn't it? And if you're unemployed, your typical day may consist of going out for two job interviews, coming home, waiting for the phone to ring and then getting loaded for lack of anything more exciting.

Boredom is the real test of a human being's ability to exercise his/her superiority over dumb animals by figuring out something better to do. There is no limit to what you can do. The old expression "read a book" may sound too simplistic but it leads to an answer. What it should actually say is that books often contain the answers to many of your problems, and that by finding the right book, or books, or knowledgeable people, you can get your head into something really fantastic. A further outgrowth of this idea is the junior college system in most areas. JC's offer evening classes in all sorts of important areas. You can learn to write, to be a printer or a technician or any number of other things, all on usually very little money. Look at your tuition as two six-packs of beer a week, or a bottle of Vodka that you would have used up and thrown away. If college life sounds a little too heavy or expensive (even \$50 may look like a fortune sometimes), try a combination of a free library card and some volunteer work. Hang around the colleges anyway, even if you're not a student. Talk to the professors or the graduate students about the area you're interested in. Plenty of people have plenty of advice for free.

If you're bored socially, if not economically, it's because somehow you've gotten yourself in a rut. Look into junior colleges or better yet, try volunteering at a community service group sometime. People who want to get to know you are everywhere. The only place you can find them doesn't have to be on the corner bar, and if you're sitting at home drinking yourself into oblivion this is even more ridiculous.

The world is a fantastic place, and it's easy to see if you don't haze it over on purpose by drinking too much. Be adventurous. Try new things. See how far your mind can stretch. You're probably a lot smarter than you think you are and you'll never know unless you try harder.

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THE BENEFICIAL PROPERTIES OF ALCOHOL

There seem to be two different predominant types of professional people in the world of alcohol abuse and alcoholism. The first type are either the vehement anti-alcohol person who is a total abstainer and can't understand why someone drinks, or the reformed alcoholic who treats alcohol like it was poison (it is virtually for him or her) and acts like everyone should be the same way. Unlike either of the above, the second type of person will attend alcohol conferences, listen to the speakers, present his own paper on the evils of the brew, and then head for the bar where he can drink a few drinks and talk over conference news. This latter type often sees alcohol in terms of "alcoholic" problems only, and since he views himself as a non-alcoholic, he feels he is in no danger at all. Both types of people have something in common: they tend to deal with only the areas of heavy problem drinking and alcoholism, and almost ignore all other topics related to alcohol (such as most of this book).

Then there is a third group, a small but growing minority who really see alcohol as not an inherent evil, but rather a major drug that can be abused by the uneducated, unintentionally; or abused on purpose for various personal reasons. These people are the first to admit to you that alcohol has both good and bad qualities depending on how it is used.

ALCOHOL IN MEDICINE

One of the first recorded uses of alcohol medicinally was in ancient China where it was mixed with opium and used as an anesthetic (naturally, with this knockout combination, the patient felt no pain). Prior to this, it is safe to assume that in pre-recorded history man's use of alcohol medicinally was discovered soon after he discovered its intoxicating effects. (No doubt the first alcohol-using caveman, to help him recover a broken leg incurred by falling out of his cave in a drunken stupor, turned to alcohol again to help him take away the pain. Assuming the recovery took over a month of continuous use, undoubtedly we also have the case here of the first person to discover alcoholism.)

Remember those Western movies where the patient takes a few slugs of rotgut before they remove the bullet? Until recent times, especially when medical help was unobtainable in the wilds, people still often used alcohol as an anesthetic. Even today, its use as an anesthetic goes on in certain limited places . . . as an example of this, recently a Californian went

down to Tijuana to get a tooth pulled. His dentist pointed to a bar afterwards and advised him to wash out the area with a couple of shots of Tequila, and this would cure both the pain and the danger of infection. It probably was inadequate for both, really, but it was certainly cheaper than codeine.

Anesthetic use of alcohol has ~~all~~ but vanished in most parts of the Western world, though, because of the invention of more effective pain-killers. First came opium, which addicted people so that Morphine was invented to cure the opiate addicts. Then to cure the Morphine addicts the ultimate pain-killer was invented — Heroin. Science marches on.

Alcohol, as you are probably aware, eases tensions and releases inhibitions. It is commonly used in unusual situations of tension or uneasiness . . . such as in uptight social settings where people might otherwise be inhibited from really getting to know each other. Although many professionals would argue that this is not a truly beneficial effect of alcohol, the people who use it in minor-stress situations occasionally think so. What is dangerous, however, is dependence on alcohol's effects in every stressful situation, every time. There is a fine line here obviously. But the inner workings of stress, and how to alleviate it, are constantly being argued. Seeing your favorite cat run over by a car might make you hysterical for awhile and bum out your whole weekend. A couple of drinks might be better for you than a whole lot of tension. On the other hand, an anti-alcohol psychiatrist or doctor would probably say, "Here, get this prescription filled for 30 Valiums." And yet that is probably worse for you. Obviously the real answer is to try and cope without the aid of any chemicals.

Except for killing pain, hard spirits are almost useless for any other beneficial reason. The possible or theoretical uses of wine have been written up by one French physician.

However, if you're counting on Muscatel or Ripple having any therapeutic effects you can stop counting. Some beers, on the other hand, can be very good for you due to the added ingredients. That is the good news. The bad news is that none of them are commonly found in America. On top of this, the congeners and other additives in many types of alcohol can have even worse effects than the alcohol itself. (See congeners section.) In Ireland and England it is still quite common for physicians to prescribe a pint a day of Guinness beer to expectant mothers due to its high iron content (this is easy to understand if you've ever tasted this thick dark brown liquid). However, as you will find out in the women's section, anything over a small amount per day can start to cause problems in pregnancy.

It is a false notion that alcohol will somehow keep you warm if you are outside in freezing weather. Sorry, but it does exactly the opposite, and speeds up the freezing process.

Western religions have alcohol to thank for much of what is contained in the Old Testament. There are countless prophetic visions and hallucinatory dreams referred to throughout this writing. Apparently somewhere along the line alcohol has gotten a whole lot more useless for prophetic visions. Just about the only revelations alcohol produces today are statements like: "Look, did you ever notice that your arm goes all the way up to your body?" Or "Wow, I never realized it before, but the sky goes on forever, doesn't it?" Some heavy imbibers experience even wilder things (the pink elephant syndrome) due to alcohol hallucinations. The proof that Biblical imbibers probably saw real things is due to the fact that, unlike modern day boozers, they remembered what they saw the morning after and could write it down.

AVAILABILITY AND DEMAND — A LOOK AT LAWS & ADVERTISING

This section is primarily on two conflicting points of view that sometimes work together — the government's point of view that is supposed to discourage alcohol use for health reasons, and the alcohol producer's point of view which is to increase sales and profits. First, the producer's point of view.

As we have already pointed out, the use of alcohol goes almost hand-in-hand with the development of modern civilization; indeed, we might have developed faster without it. The one unarguable point is that alcohol is here to stay, so the best we can do is to try to curb its over-use to avoid heavy problems.

The alcohol industry works on a sort of reverse principle of supply and demand. In this case the supply is almost unexhaustable, so they must somehow create a greater demand through advertising. This is not entirely blamable on capitalism; in countries where no advertising is permitted alcohol often becomes an "in" drug with a semi-legitimate status that makes it even more attractive.

One possible solution is to put warnings on each advertisement. That sounds easy, but warnings about what? The message "Caution: Alcohol drinking may lead to alcoholism" is almost as ludicrous as saying in automobile ads that "Driving may lead to accidents." However, there are some possible solutions. Bacardi has recently printed advertising that says "Bacardi mixes with everything — except driving." Hooray for them. At least this is a step in the right direction.

You are probably well aware of the typical advertisement for alcohol today. In magazines oriented towards women, we see ads that insinuate that the "liberated woman" drinks what she wants. Or you see women drinking with a group of men "just like one of the guys."

In men's magazines there is often the theme of seduction — get her loaded and she'll do anything you want. Women fall over a guy who uses X brand Vodka. Alcohol will make you look manly and attractive to the ladies. Of course, what they don't point out is that while alcohol increases the desire it also decreases performance. Of course such ads are not actually lying to you. The favorite here is insinuation by association . . . and as alcohol manufacturers point out, they can't help it if you think what they didn't actually say.

Another favorite of the alcohol advertisers is to depict a person enjoying himself in a situation that is impossible while under the influence of alcohol. Beer won't help you enjoy the great outdoors; it will only dull your perception and senses so that cool breeze wafting through the mountain pines starts to feel and smell like the air conditioner in your apartment. Sports events are also frequently used as backdrops; and while it is true that a can of beer is often drunk before the television set on a Sunday football game, it is also true that alcohol greatly decreases the players' ability to function in a game, and it is this latter image that is sometimes implied. Imagine a cool glass of X lager as you sail in your sailboat across the seven seas. Imagine you drunk, floundering in the water after you tip over.

Some ads for alcohol are not even ads at all, and they tend to hit your head when you are not expecting it. Some makers of Swedish and Danish sex movies for export are paid by alcohol companies to show that a certain brand of liquor was responsible for the seduction. Even in American movies this is sometimes done (though not paid for, at least lately).

And it doesn't take any psychologist to tell you the relationship between seeing and doing. Late at night, watching a pizza commercial on television, don't you feel hungry for some strange reason after that? Advertising people are very clever — and that is precisely what the alcohol manufacturers pay them well for.

LAW: ATTEMPTING TO PUT THE LID ON ALCOHOL USE

If you are reading this in America you are no doubt aware of Federal and state efforts to curb alcohol consumption through two primary tools: licensing and taxation. Following the great prohibition collapse in America, we proceeded to set up a system whereby states could determine on their own whether alcohol was to be sold. Most states permitted open sale once more, but there were some exceptions. A few states opted to give this decision to the counties rather than make a blanket decision.

Licensing in most states is simple but fairly intelligent. A certain number of licenses are made available to serve liquor within a certain population or area size. If the licensee violates any provisions of the law he may have his license revoked and it will go to the establishment next in line on the waiting list. In some states one business will "buy out" another in order to obtain the license. The important thing is that the number of establishments serving liquor is kept to a certain number. Restaurants, especially those which serve only beer or wine, often have an easier time obtaining licenses since it is generally more desirable (and a more "legitimate" social habit) to serve alcohol with meals.

The bulk of taxation is left primarily up to the states, with certain counties or municipalities free to add an additional tax if they wish. In some states hard liquor is only available in state-operated stores; in most others it is available in privately run liquor stores.

In some ways, the liquor manufacturers actually benefit by a variety of state laws. For example, in California and other states we have what amounts to state-supervised price fixing so that no local store can discount the price of a certain brand of alcohol more than any other store. This is good news and bad news. Decreases in price would of course encourage greater alcohol consumption. However, according to one

study, price controls in California alone in 1973 earned the alcohol manufacturers an extra \$3 million in profits. Some of this they pocketed; the rest went into advertising designed to make you thirstier for their products.

One proposal currently being considered is either a tax on all alcohol advertising, or a tax on all alcohol sales that would go towards greater amounts of alcohol education nationwide. However a similar proposal made in 1973, recommending such a tax on drug companies' ads for over-the-counter drugs (to pay for drug education campaigns) was voted down. A tax to aid alcohol-related treatment and rehabilitation programs might not be a bad idea either. You can rest assured this is not going to happen very fast.

Alcohol manufacturers often work in strange and insidious ways. Following prohibition some of the better known brewers and bottlers teamed up their efforts to produce heavy anti-marijuana scare literature and posters, seeing marijuana as a potentially competitive drug. For all the scare stories, marijuana remains still a rather benign drug, with intoxicating actions decidedly different from that of alcohol. The biggest difference, though, is that marijuana causes no physiological addiction in the long run . . . and whether or not they say it, all alcohol manufacturers have a large vested interest in the profitable purchases of liquor by alcoholics and problem drinkers.

FOREIGN MODELS

Every country in the world, of course, has its own particular laws that regulate the sale and consumption of alcohol. All but a few have at least tried to come up with regulations that tend to decrease use. However in many countries use is escalating, not decreasing. Canada and Switzerland have licensing systems that are not unlike those in the United States. In Switzerland, however, their per capita consumption is somewhat lower due to a stronger foothold by the Temperance unions and a more moderate life-style in general.

In Arab countries, as we have mentioned, alcohol is either totally prohibited or is imported almost solely for the use of tourists in resorts. In India, most areas permit alcohol sales but a few states have gone "dry" and implemented prohibition with some amount of success. In the long run we could conclude that in India and certain other countries, alco-

DRINKING MYTHS:

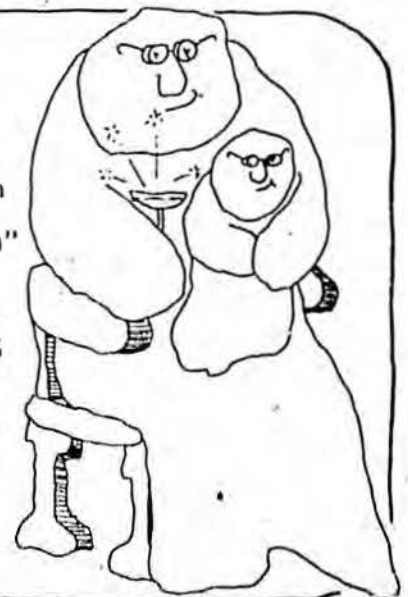


IF THE PARENTS DON'T DRINK, THE CHILDREN WON'T DRINK.

Sometimes. But the highest incidence of alcoholism occurs among offspring of parents who are either teetotalers. . . or alcoholic. Perhaps the "extremism" of the parents' attitudes is an important factor.

THE TIME TO TEACH KIDS ABOUT DRINKING IS WHEN THEY REACH LEGAL AGE.

By that time, they've long since learned what we can teach them. Like it or not, we teach our kids from birth. And they learn more from what they see us do than from what they hear us tell them.



Courtesy U. S. Jayces

hol use will remain stable and minimal as long as the drug of choice is hashish. In America we have no such drug with both the intoxicating effects and legal status at least for the present. It is also interesting to point out that where hashish use is predominant over alcohol it is usually also illegal (this is another complex story) though the enforcement procedures are so lax that it makes almost no difference. In fact, public alcohol intoxication is a much more serious offense usually than arrest for hashish trafficking in non-major amounts.

In Finland we have another good attempt at alcohol control. All alcoholic beverages are either imported or manufactured by Alko, the Finnish State Alcohol Monopoly. Alko is thusly able to funnel both profits and taxes into research, education and treatment. They have even come up with non-alcoholic beer, wine and champagne that tastes like the real thing. So far, however, much of the money has gone into research and treatment and not enough has gone into preventive education, so the public is still largely unaware of stopgap measures which amount to teaching the people how to drink without overdoing it. Giving a low priority to preventive education is, however, common to Western nations and Alko is working to change its priorities.

In Italy and Spain there is a rather good pattern to the drinking habitats; the bars are the precise places where you go for lunch or dinner, and are bars that serve great food as opposed to restaurants that serve liquor. As a result you see almost nobody just sitting there downing drink after drink. In Italy there is also a second type of bar (commonly called "bar" in Italian) that almost never has a single chair or barstool. These establishments are for quick drinks and coffee, and abound everywhere. It is almost physically impossible for anyone to down drink after drink while he has to stand up.

In Mexico, as many Americans are aware, licensing in the border districts is lax and taxes are almost nonexistent by American standards. (This is due largely to the economics of the country where expensive liquors are often unaffordable with or without taxes, except for Tequila and some local beverages.) Mexico enjoys, as a result, millions of dollars a year in extra tourist revenue and pays for it by having drunken Americans sloppily cluttering up the streets of the border towns.

In Great Britain, the American system is taken a step further in several directions. In America, most states place limitations on the hours a bar or liquor store can stay open, and this limit usually sets closing time at between midnight and 2 a.m. However, in Britain the open time for a neighborhood pub or off-license (liquor store) is a complex system of open-close-open-close every day, resulting in only half of the purchasing time. In London pubs and stores close at 11 p.m.; in other places usually at 10. In addition, the taxes are steeper than they generally are in America, in exchange for more government supported social welfare if not greater alcohol awareness education. Across the channel, in Ireland, we find a legally similar system but with less per capita consumption of most types of alcohol.

The Danish system is worth a closer look. Licensing to serve alcoholic beverages is granted to anyone 10 years or older who can show sound financial conditions. Liquor is served in a variety of clubs and restaurants, some closing as late as 5 a.m., and others opening as early as 5 a.m. There are no advertising restrictions as long as ads contain truthful representations. The primary control is taxation, and it's heavy even for beer. But it has paid off. Talking in terms of absolute alcohol, consumption rose from 1918 to 1930 from 8 liters to 10.2

liters per person per year. After this taxes were drastically increased and this gradually lowered the consumption rate to 1.2 liters per year. By comparison, the yearly U.S. consumption per person (adult) is 2.6 gallons — or almost 9 times as high! Although the Danish consider their alcohol problem to be serious, they have pointed out that "repression and restriction have no future" in their country. Instead, educational efforts at an early age are becoming more widespread, and between education and taxation the problem should diminish further.

CONCLUSION

Like the Danish have concluded, education and taxation look like our best possible routes to follow at the present regarding alcohol. If you are a regular alcohol purchaser you well know that most forms of alcohol are already expensive enough. You don't see directly where your tax money goes, and this is a major problem. But it seems logical that if somehow we could channel some of those taxes into education, rehabilitation, treatment and research on the whole subject an increase would be worthwhile. The big fear about this at the moment would be that, like some other well-intended programs, the money would go instead towards administrators who never managed to get anything solid off the ground. Assuming that this could be overcome with a lot of diligence and careful planning, it looks like an idea worth investigating. Let's hope it gets through.



WOMEN AND ALCOHOL PROBLEMS

For years and years the predominant literature on
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alcoholism has pertained mainly to men's problems. When we speak of "skid row" what comes to mind is a bunch of men passed out in alleys from over-imbibing. In fact, even the word "bar" is associated more with men than women, although the designation "cocktail lounge" somehow conjures up more of a "family" atmosphere. There have been countless books, movies and plays centering around the family which is suffering because the male breadwinner is sliding off into alcoholic destitution.

Well, we know that women drink too, so where have they been all along? The answer is that they have been right in front of use, but unfortunately not in the heads of the media scriptwriters. In the last two years, though, researchers have been digging trying to find statistics on women drinkers. How many of them are there? How many are problem drinkers? How many are alcoholics? The available estimates vary so much that it is hardly worth quoting them, but let's hazard a guess anyway.

First of all, we know that (depending on which definition you use), there are somewhere between 9 to 12 million alcoholics in the United States, or about one in ten drinkers. Now, look around you. Look at all the other women you know and observe their drinking habits. Look at them drinking cocktails, watch how much they consume at parties, ask a few questions. Then think about how many "hidden" drinkers there are — bored women who stay alone at home with or without kids. And think about all the career women with pressures to do as well or better than their male counterparts. There certainly is just as much cause for a woman to start drinking heavily as many men do, and just as many pressures although they may be different in origin. The guess — according to the best estimates and some logic thrown in — would be anywhere from 2 to 4 million alcoholic women. Men still have them beat 2 or 3 to 1, but they are catching up.

Alcoholism per se is no different for women than it is for man. However, the original causes of the problem drinking may vary greatly. Some of the reasons are easy to figure out: This is still largely a male-dominated society that expects many women to stay home and raise children. To insure this, the structure of many welfare systems where there is a fatherless family almost prohibits the mother from going out and seeking work outside the home. If the father had the children it would be perfectly normal to put them in a nursery in the daytime and go to work. Even where money is not a problem, a male-dominated society frowns upon a mother not being there most of the time to take care of her family. She can do it, but she usually is made to feel like she is neglecting them.

Women, more than men, seem to point to a specific problem as the reason for their heavy alcohol use. This can be family-raising pressure, divorce, menopause or even as we said before, pressure on a career woman to perform her job better than a male.

Divorce rates seem to be higher for alcoholic women than they are for alcoholic men. This is probably due to the fact that women have been typecast as oversympathetic creatures whose primary duty is to care for a husband, particularly in times of need, and in the case of alcoholism, without interfering much. The problem with typecasting is that sooner or later women start believing these roles to be true and part of the obligations of being female. Thankfully we're getting out of roles like that. Non-alcoholic husbands are far less tolerant as a rule of their alcoholic wives.

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It would appear that in the studies available to date, loneliness is also a factor in most alcohol problems. There are more socially acceptable ways available for men to get out of the rut than women. Many women still retain fears that any attempt to be outgoing can be misinterpreted as a sexual advance while men harbor no such fears in most cases. Even women who want to make sexual advances often feel that to do so makes them look "cheap" in the eyes of a man, so they do the only other thing which is sit around trying hard not to be noticed so they don't have to make this decision. Obviously some changes in both traditional roles and self-esteem are needed if more and more women are to avoid becoming alcoholics.

The changes are slow, but they are happening faster now than they have at any other time in recent history. Let's hope that the future lessening of women alcoholics due to boredom and loneliness will not be totally replaced by women suffering the frustrations of competing in a still male-dominated sexist society.

There are other factors at work here also. One is the problem of tranquilizer abuse, a common stand-in for problems that could easily lead to alcohol abuse later. In the world of television advertising, women have more pain and frustration messages aimed at them than men. Women are always being warned about their kids causing tension headaches, or about constipation, ring-around-the-collar, whether they can make good coffee, whether their breath is kissing fresh or whether their armpits stink. There are dozens of special drug-store preparations for women to get hung up on, and comparatively few for men outside of shaving cream and after-shave lotion.

Women certainly have a lot to overcome to avoid the kind of pressures that can lead to excessive drinking. Perhaps our standard should even be higher here than previously imagined by other researchers. It could very well be that soon women will have to not only be equal to, but better than men in getting their heads around this extra barrage of man-made problems.

ALCOHOL AND PREGNANCY

The following chapter is excerpted from the Do It Now Foundation publication "Chemical Use/Abuse and the Female Reproductive System" by Nancy Gray:

Alcoholic mothers have a marked tendency to have alcoholic offspring. One statistic shows that 54% of all alcoholics had alcoholic parents. 36% of all narcotic addicts also had alcoholic parents.

Psychiatric histories of female alcoholics often show a complete inability to accept their feminine identity and a use of alcohol to escape the entire sex-role conflict existing within them. These women complain about their poor relationship with their mothers, which in turn impairs their ability to get along with women in general, continuing even when their own daughters are born. Because of her inability to get along with her mother and female friends, the alcoholic mother has difficulty raising her own daughter who consequently will not like her alcoholic mother. Therein lies a continuing pattern of alcoholism which can be unwittingly passed from mother to daughter.

Heavy alcohol consumption causes growth retardation in the fetus which can be evidenced by decreased length in the

babies along with decreased weight and head circumference, intelligence deficiency, developmental delay, joint distortions, facial abnormalities and congenital heart disease. Women who use alcohol heavily have a 20% chance of having babies with birth defects. This is known as the "fetal alcohol syndrome". A recent study showed alcoholic mothers have a 17% chance of still births compared with 2% for women who do not use alcohol. One other study of 23 alcoholic mothers had a total of 5 babies born premature and stillborn and two dying short-

ly after birth. Of the remaining surviving 16 children, all had indications of impaired intellectual performance when tested at 7 years of age, although it is not clear whether this was caused by congenital brain damage or being raised in an alcoholic environment.

Probably the best conclusion here is: Watch how much you drink when pregnant, many of the findings are as yet preliminary, but the risks outweigh the benefits.



Many people are taking note of women's alcohol problems lately, even Mary Worth. However, despite much publicity, women are still less likely overall to get strung out than men..

ALCOHOL, DRUGS, AND SAFETY

(Note: We have included other drugs in this section because most alcohol users encounter other drugs of some sort, and because of many similarities in use patterns.)

There can be little doubt in anyone's head that alcohol is our number-one drug safety hazard. Less well recognized is the fact that many other commonly used drugs, both legal and illegal, can also greatly impair our ability to operate in the world.

Over-use of alcohol often produces a dull-witted aggressiveness that gives it quite an advantage over most other drugs in the accident race. Alcohol is also often over-used when the user is out in the world and likely to team up with the Drunk's Deadliest Companion: the automobile. This combination makes for an involvement in fifty percent of all traffic fatalities that often overshadows the accidental deaths and injuries attributable to other drugs.

Therapeutic doses of most "daytime" drugs rarely make a machine operator, for instance, feel so incapacitated that he cannot go to work. However, accidents are not necessarily the result of a stuporous condition. More often they are the result of a moment's inattention at the wrong time, or miscalculations of distance or speed. The side-effects of many prescription and non-prescription drugs, as well as alcohol, can alter judgement, coordination, attentiveness, vision, and produce even more subtle effects a drug user may not notice unless he looks for them.

When consumers purchase a drug they should ask the prescribing doctor or pharmacist what the drug is for and what it does. A number of factors, though, complicate the prediction of a drug's effects on a specific individual, often leaving the liabilities of a drug for the patient to figure out.

Some people are simply more sensitive to the effects of some chemicals than other people. Tolerance may also be a

factor. An adult may become light-headed and drowsy when he first starts taking a sedative, but later may be able to tolerate four times that dosage without any serious side-effects. And conversely, the more often you use some drugs, the more likely that unpleasant side-effects will develop. Fatigue and emotional states can also affect how some drugs will react in a particular body at a particular time.

The problem of predicting drug reactions is compounded when more than one drug is used at the same time. Many common drugs used together can cause completely unpredictable reactions. Alcohol, for example, can multiply therapeutic doses of many drugs through increased impairment all the way up to an overdose level. The prescribing doctor should always be told of other medications currently being taken and asked how the drug mixes with alcohol if the patient is a drinker.

Preparations containing codeine (an opiate), belladonna alkaloids (such as in Contac and many other cold preparations), and many other potent drugs can be purchased in grocery and drug stores without a prescription. Most of these drugs advertise that they are safe and non-habit forming when taken as directed. "As directed" often means irregularly and in small quantities. Many of these drugs carry a warning on the package to the effect that this drug should not be used while driving or operating machinery. Another perennial favorite of package copy writers is "discontinue use if unpleasant side-effects develop." Drug manufacturers are not ones to limit sales with empty warnings or senseless limitations on use. If it's on the package, they mean it. Read the package.

ALCOHOL

The alcohol-automobile team is so spectacular that it even eclipses some of alcohol's achievements in other fields. Recent studies indicate alcohol may also be a factor in almost half of all drownings. Forty to sixty percent of all bone frac-

tures involve alcohol. One-third of the general aviation pilots killed last year had a measurable blood-alcohol concentration in their bodies. One-half of all murders and fifty to sixty percent of all drug overdoses involve alcohol.

Alcohol can be counted on to be involved in more than its share on almost any accident statistic sheet. And you don't have to be dead drunk to increase your chances of being added to a statistic sheet. A single mixed drink or a couple of beers noticeably affect judgement and coordination in controlled tests. Commercial pilots aren't allowed to drink any alcoholic beverages at all within 24 hours of flight time.

The laws of most states say when your blood-alcohol concentration reaches .10 percent you are too intoxicated to drive. Your own personal limit however, may be well below that. Increased accident causation is noticeable at 0.04 percent, and the probability is at least six times as great at 0.10 percent. The 0.05 to 0.10 range is critical. Somewhere in that range you've had too much to perform activities that require any degree of coordination or judgement. In particular, you're too intoxicated to drive. On the highway you're risking people besides yourself.

Since your body gets rid of alcohol at about 0.018 percent an hour, you have at least four hours to go before you can think about functioning with the same ability you have when sober.

Black coffee, cold showers, fresh air or other folklore remedies will not speed up the burning of alcohol. They may make you a wide-awake drunk, but you're still just as impaired. It might be better to go to sleep.

ILLEGAL DRUG USE

While no illegal drug can compete with alcohol's accident score, most of the illegal drugs are still quite a few steps ahead of the prescription and over-the-counter drugs simply because of the difference between therapeutic and recreational doses. Common sense says the higher you are the less capable you are of performing intricate tasks. Additionally, illicit drug users must do without the benefits of a pharmacologist's advice.

Sufficient doses of any *Central Nervous System Depressant* will slow reflexes, thinking processes, and affect coordination. These drugs include the opiates, the sleeping pills, the

This Table Is Only For Educational Purposes

Chart courtesy of National Safety Council

Alcoholic Beverages	Normal Servings	Estimated Possible Blood-Alcohol Concentration Achieved With Normal Serving*														
		ONE DRINK				TWO DRINKS				THREE DRINKS						
		Alcohol Content	Body Weight				Alcohol Content	Body Weight				Alcohol Content	Body Weight			
		100	140	180	220		100	140	180	220		100	140	180	220	
		(oz.)	(Per Cent) **				(oz.)	(Per Cent)				(oz.)	(Per Cent)			
Beer	12-oz.	.48	.04	.03	.02	.02	.96	.07	.05	.04	.03	1.44	.10	.08	.06	.05
Wine	3-oz.	.36	.03	.03	.02	.02	.72	.06	.05	.04	.03	1.08	.08	.06	.04	.04
Liqueur	1-oz.	.40	.03	.03	.02	.02	.80	.07	.05	.04	.03	1.20	.08	.06	.05	.05
Distilled Spirits	1-oz.	.45	.04	.03	.02	.02	.90	.07	.05	.04	.03	1.35	.09	.07	.06	.05
Mixed Drinks																
Martini, Manhattan	3½-oz.	1.05	.08	.06	.04	.04	2.10	.15	.12	.10	.09	3.15	.22	.18	.12	.10
Old Fashioned,																
Daiquiri, Alexander,																
Margarita	4-oz.	.60	.06	.04	.03	.02	1.20	.08	.06	.05	.05	1.80	.11	.09	.08	.07
Highballs with Mixer	8-oz.	.56	.05	.04	.03	.02	1.12	.08	.06	.05	.04	1.68	.12	.09	.07	.06

This chart shows various kinds of drinks and their alcoholic content. They're the size drinks normally served in bars or cocktail lounges. At your body weight you can determine the approximate blood-alcohol concentration you would reach after one, two or three drinks. The estimate is for a normal serving period of one hour.

The concentration of alcohol attained in the blood depends on several things:

- *The amount of alcohol (number and strength of drinks)
- *Time elapsed since drinking began
- *Body weight
- *Quantity and kind of food in the stomach (this does not decrease alcohol's absorption into the blood stream, but only slows it.)

Let's say you weigh 160 pounds. And you drink five or six ounces of 86 proof liquor in a little more than an hour's time. You're at that critical 0.10 percent blood-alcohol mark.

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sedatives -- all the down drugs. In common with alcohol, a brother down, these drugs have the peculiar disadvantage of interfering with realization of impaired performance. In fact, their affect on driving and work performance are very similar to alcohol's, with the added disadvantage of not being so detectable, increasing the temptation to use them where they shouldn't be used. The downs are also the drugs most likely to cause dangerous interactions with alcohol.

Central Nervous System Stimulants, such as the amphetamines (speed), are often used illicitly to combat fatigue. While these drugs do temporarily increase efficiency, they can keep you awake and going long after judgement and coordination have fallen asleep. Prolonged use of amphetamines has also been known to cause hallucinations.

The *hallucinogenic drugs* can make standing up a hazardous venture. Obviously, a person under the influence of any hallucinogen is in no shape to safely drive, work, or walk down the sidewalk without supervision. Depending upon dosage and the type of drug, most hallucinogens will exert direct influence



for 6 to 12 hours, with a noticeable decrease in efficiency and possible visual disturbances for the following 24 hours.

Marijuana's popularity as a socializer gives it, in common with alcohol, the likelihood of having to drive while high. Controlled studies indicate marijuana does not have nearly alcohol's detrimental effect of driving ability. The two drugs produce a similar dulling of wits, but a marijuana high is not as likely to produce the sometimes fatal overconfidence associated with alcohol. However, marijuana is likely to cause lapses of attention and has been known to affect vision and coordination. Marijuana can also make the simplest task seem hopelessly confusing. Driving or operating machinery under its influence is certainly not recommended from a safety standpoint.

Marijuana has also been shown capable of seriously decreasing work efficiency.

In conclusion, drugs affect different people in different ways. The same drug may act differently on the same person at different times. How a particular drug affects your individual ability to perform a specific job at a specific time is your responsibility to figure out. Doctors and pharmacists can give good advice, but the ultimate responsibility is your own. When you take a drug, any drug, pay attention to what it does to your mind and body. No drug should be taken lightly. A little self-awareness, and a little care can greatly increase your chances of living to a ripe old age with all appendages and organs intact.

ALCOHOL-DRUG COMBINATIONS & THE ART OF SURVIVAL

This chapter is for alcohol-drug users, or people who come into contact with alcohol-drug users. It is an introduction for the person who might purposely or accidentally mix other drugs with alcohol. This, of course, includes a person on any medication who drinks. In short, this is a sort of primer in the art of drug-alcohol survival.

Alcohol is an extremely active drug. In combination with other drugs it can be fatal. Famous people like Judy Garland, Dorothy Kilgallen, Brian Jones of the Rolling Stones and Janis Joplin, to name a few, were victims of this practice. The list goes on a long way . . . you can probably think of a few of your own . . . maybe even a close friend or relative.

While we cannot possibly know every substance which will react adversely with alcohol, hopefully this will acquaint you with some of the basics.

BARBITURATES

This is the most famous of the alcohol-drug deadly combos. The barbiturates in themselves represent a group of drugs with varied actions and uses. The effects range from mild sedation, to tongue slurring, to stupor, in many cases, death from overdose. They are usually classified as general depressants. This means that they depress or slow down the entire central nervous system (brain and spinal cord). Since the central nervous system is responsible not only for thinking, reasoning, and sensory powers, but also for vital functions such as breathing and heart beat, it is easy to see that if it were slowed

down to the point of stopping, death would inevitably result. This is what happens when people die from ODing on Reds, or from taking too many barbiturate sleeping pills.

Most people are wise enough to be somewhat cautious and not exceed the prescribed dose or go beyond their "tolerance." Add alcohol to the barbiturate and a strange thing happens.

Alcohol is also a Central Nervous System depressant. Its actions on the brain are in many ways similar to the long duration barbiturates. With this in mind it seems that you would have a simple one plus one type addition taking place, if you used them together. Or you might think that you can drink just a few drinks, not get drunk, drop a normal dose of barbiturates and at worse be really stoned. Unfortunately your body never studied simple math in this case and instead reacts in an unpredictable multiplication process. The results, depending on the individual, could end in termination of central nervous functions, and as mentioned before, death. NEVER UNDER ANY CIRCUMSTANCES TAKE THE RISK OF MIXING THESE TWO DRUGS. IT'S NOT WORTH THE SURPRISE!

SEDATIVE HYPNOTICS

Downers not classified as barbiturates are almost as dangerous. One is Chloral Hydrate, or the infamous "Mickey" popularized by Hollywood scriptwriters. Chloral Hydrate is popularly consumed at bedtime in the United States to effect a rapid induction of sleep. It is surprising that more data is not available on this drug in combination with alcohol, as it is often employed for hypnosis. Chloral Hydrate and alcohol to-

gether can not only knock you out; it can also kill.

Methaqualone drugs are hypnotic-sedatives not chemically related to any other hypnotic-sedatives. They are relatively fast-acting and of short duration. Their therapeutic uses are for mild insomnia, or for the "daytime" sleeper. In the past few years they have become a drug of popular abuse, producing a heavy stupor and, as claimed by some, enhancing sexual pleasure. A lot of cases of potentiation with alcohol have occurred. Some of the effects are very different than those with alcohol alone or with barbiturates. Signs of problems could be "pins and needles" feelings in arms and legs, headache, nausea, fatigue, epigastric discomfort, dizziness, or diarrhea. **DEATHS HAVE OCCURRED FROM MIXING METHAQUALONE WITH ALCOHOL.** They are not safer than barbiturates. Overdose has also occurred when these drugs have been mixed with other sedatives, analgesic or psychotherapeutic drugs.

Biphetamine-T, Quaalude, Somnafac and Sopors are all representatives of methaqualone drugs.

Other non-barbiturate, but potentially dangerous combinations with alcohol, are paraldehyde, glutetnemide (Doriden), ethinamate (Valmid), methypylon (Noludar), and the bromide compounds.

This same general rule also applies to the less heavy tranquilizers such as the chlorpromazines (Thorazine and Stelazine) and the haloperidals, (Haldol). Also included in the list are brand names like Equanil, Ultram, Trepidone, Librium, Valium, Serax, Vistaril, Atarax, Frequel, Suavitil, Phebox, and many others.

Bromides have been used for many years to combat sleeplessness. Their effectiveness compared to barbiturates is much less. They have sedative properties, but a number of other compounds are more predictable, and therefore safer. This is, of course, a strange paradox as their use is largely confined to non-prescription, over the counter remedies. This just illustrates that when it comes to combination with alcohol, you are not safe with even easily purchased "everyday" drugs.

All of the precautions above are not intended to seem unique to alcohol. A combination of any of the mentioned substances could result in an unhappy ending. A good rule of thumb is don't mix your downers!!!! Whether it's alcohol/barbiturate, barbiturate/tranquilizer or some combination with methaqualone . . . the effects could kill you.

STIMULANTS

For many years, caffeine and the amphetamines were the only drugs available that would produce a stimulating effect on the brain. In relatively recent years, however, new breeds of stimulants have reached the pharmaceutical and illicit markets. The most dangerous of these, inasmuch as alcohol and other drug combinations are concerned, are the MAO (Monoamine Oxidase) inhibitors.

MAO inhibitors are, for the most part, no longer in general medical use. Their drop in popularity was mostly due to the highly "undesirable" side effects that sometimes accompanied their use. Among these were super high blood pressures and unpredictable reactions with other drugs and **EVEN SOME FOODS!** Reports of people dying after eating cheese with MAO inhibitors exist . . . and to mix with alcohol . . . just unpredictable. Sometimes an overamp stimulation effect has occurred . . . extremely high blood pressures causing small capillaries to rupture . . . fevers as high as 107 . . . or inversely . . . a very downer-like effect resulting in cardiac arrest . . . and

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of course (not to be overlooked), death itself.

Other chemicals falling in the new breed of stimulants are the tricyclic antidepressants amitriptyline (Elavil, Triavil) and nortriptyline (Aventyl) and Ritalin. These have effects similar to the MAO inhibitors in that they cause severe interaction, primarily in terms of depressant action in conjunction with alcohol. Tricyclic antidepressants are in more abundant use than MAO inhibitors and therefore should be watched with equal or greater emphasis.

OTHER STIMULANTS: Other stimulants such as caffeine, amphetamine and methylphenidate (Ritalin) represent as much of a risk. Let's qualify that, though, in terms of street drugs. Analysis results from around the western world tend to indicate that much street speed is not turning out to be what it is alleged to be. In fact, there have been cases where both MAO inhibitors and even barbiturates have mistakenly been sold as speed. In addition, there is usually no way (except by analysis or personal use) to know if you have a chemical with potential harmful effects when mixed with alcohol . . . if it has been obtained illicitly.

OTHER DRUGS

ANTICOAGULANTS: Clotting or coagulation of blood is a natural phenomenon in the body. The formation of blood clots in undesired parts of the body such as the brain, arteries, veins, etc., could be fatal, though. For this reason drugs known as anticoagulants were developed. They are designed for patients who have undergone certain types of surgery or with disorders making them prone to clotting. The most frequently used anticoagulants in clinical medicine are heparin (Lipo-Hepin, Panhepin) and the coumarins. Heparin is a compound occurring naturally in the body, while coumarin is a general name for several compounds. They include bishydroxycoumarin (Dicumarol), cyclocoumarol (Cumopyran), warfarin (Coumadin) and others.

The primary difficulty with using these drugs with alcohol is that the effective dosages become unpredictable. Additionally, patients with liver disease (as is often the case with heavy alcohol drinkers) have an increased sensitivity to the action of anticoagulants. The word of caution here is that if you are on an anticoagulant and still use alcohol you must take the same amount daily in order for the anticoagulant effects to remain the same for the prescribed dose.

ANTIBIOTICS: ". . . and don't drink any booze or the stuff won't work" is a phrase that is familiar to anyone who's turned out positive in a VD test. What they mean is that certain antibiotics are slowed down or inactivated by high blood alcohol levels. The full punch of the antibiotics are necessary to exorcise the unwanted beasts.

ORAL HYPOGLYCEMIC AGENTS: Insulin continues to be the most useful drug for diabetes. Unfortunately it must be injected in order to produce its effect. Efforts therefore have been made in producing "oral insulins," some disastrous, others moderately successful. Some symptoms which have been known to occur when mixed with alcohol are heavy flushing of face and body, breathlessness, and headache. In addition, some people using these drugs with alcohol have reported a "metallic" taste in the mouth.

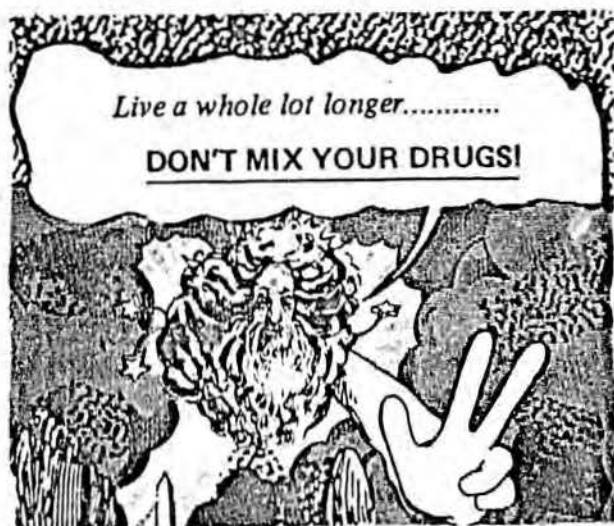
METRONIDAZOLE: Another important drug to list is Flagyl or metronidazole which is used to treat trichomonis. According to the Physician's Desk Reference (PDR) "Alcoholic beverages should not be consumed during Flagyl therapy."

because abdominal cramps, vomiting and flushing may occur."

DISULFIRAM (Antabuse) is a drug which purposely sensitizes an individual to alcohol. It is used as a deterrent for alcoholics. It works by producing much the same effects as metronidazole when mixed with alcohol.

ANTIHISTAMINES are in widespread use as cold and allergy remedies. In some cases they are used for other purposes but their most familiar appearance is in the cold-allergy capsules (Allerest, Contac, etc.). Most people do not realize that antihistamines have a depressing effect on the central nervous system. As a matter of fact, some antihistamine preparations are actually sold as non-proprietary drugs for their sedative action. Tests with alcohol indicate only slight mental process infringement (beyond that which is caused by the alcohol alone). Motor response (muscles & coordination) were affected. While you shouldn't drive after drinking in any situation, you really increase your chances of an accident by mixing booze with an antihistamine.

DIURETICS: Ethacrynic acid (Edicrine) is a potent diuretic that is currently under clinical investigation. When this drug is mixed with alcohol the toxicity is increased. It seems to metabolize alcohol. In addition, the diuretic characteristics of alcohol combine with the diuretic itself and produce an increased "wetting" effect. There is evidence that this effect is common to all diuretics. The principal danger is dehydration.



TOBACCO: Recent studies regarding heavy tobacco use and alcohol consumption together indicate that the former potentiates the latter (not to any serious levels, but tests have shown that a person intoxicated on alcohol becomes even more intoxicated after smoking). The intoxication lasts longer, too. This is primarily due to the increased absorption time caused by the nicotine. Other studies indicate that smoking and drinking together may lead to degeneration of the optic nerve. A substance called pyridine, which is present in all tobacco, seems to be the villain. It is not water soluble and becomes a major problem only after being dissolved in alcohol.

MARIJUANA: Current research indicates no unfavorable reactions between alcohol & cannabis.

LSD: Alcohol and LSD do not react with each other, but instead, the booze acts like a depressant to bring the acid trip down. Also, all that alcohol has the nasty habit of coming up, leading to a potentially unpleasant experience.

OPIATES: Opium and opiate derivatives (Morphine, Heroin, codeine, etc.) are CNS depressants and show many of the same signs of potentiation as barbiturates. It's interesting to note that alcohol is sometimes used as a substitute for junk. It's not a very good substitute, however, and only provides temporary relief. Tests have shown that Heroin and alcohol have a cross-tolerance to each other due to similarities in metabolites produced from the chemicals in the body. Separate each has its own tolerance level in the body. Together . . . ??

HYDROCARBON VAPORS: Inhalants (mainly paint, aerosols, glue and petroleum products which are sniffed) have been shown to sensitize the heart muscles to epinephrine (adrenaline). Alcohol increases the activity of the adrenal gland and could therefore represent a danger in this area. The two drugs also have a cross-tolerance similar to that of barbiturates and alcohol.

PCP: Phencyclidine is a very potent animal tranquilizer. It is popularized as hog, peace pill, angel dust, etc., and may be injected, smoked or ingested. It is a heavy psycho-motor depressant. It is very active when given the increased blood circulation caused by alcohol. This drug also potentiates with alcohol. There have been deaths reported due to alcohol-PCP combinations. One of the alarming things about PCP is that it seems to be one of the most popular ripoff substitutes for street drugs, primarily THC, but also frequently found in combination with LSD and sold as "mescaline" and "psilocybin." Virtually every sample of THC sold on the streets in the last five years has contained only PCP in moderate to heavy amounts.

THOSE FAR-OUT PLANTS: Peyote, psilocybin mushrooms, ad infinitum, have been used for centuries to get man off. Unbeknownst to most, a few of these plants do have undesirable side effects when mixed with alcohol (which of course is assuming you haven't picked a poisonous plant by mistake to start with, in which case you can ignore potentiation with alcohol as the least of your worries). Peyote, if not cleaned properly, contains a substance called lophophorine that creates serious gastric disturbances when ingested. This same substance when mixed with alcohol potentiates and may cause spasms and cramps in addition to the previous disorder. One mushroom (*Coprinus stramentarius*, not *psilocybe*) can be consumed as food with no problems. Mix it with alcohol and you're in for an upset. It contains disulfiram and will cause heavy flushing, nausea and vomiting in this combination. Reactions with other mushrooms have been noted, but of lesser importance. "Be careful of what you smoke or eat" goes double if you're mixing it with alcohol.

STREET DRUGS IN GENERAL: Analysis surveys from the U.S., Canada, Holland and Germany, etc., indicate that over half of street drugs are not what they are alleged to be. This proposes some surprising revelations. In many cases, "common" street drugs have had exotic clinical drugs substituted for them. These drugs plus the numerous congeners and cutting agents present in even the "good" street drugs could spell catastrophe once added to alcohol.

CONCLUSION

The preceding information is by no way complete. Whenever using any drug with alcohol you are taking a gamble unless you KNOW it will not interact. If you are taking medication under the instructions of a qualified doctor, ask him what precautions you should take regarding alcohol. If you are

Involvement with street dope you can never be sure what a substance is . . . much less whether it will form some undesirable reaction with alcohol. Alcohol is currently the world's most abused drug. Why complicate things by mixing this drug with another? (Or any other two drugs, either?)

ALCOHOL OVERDOSE

You don't usually hear much on the subject, but alcohol overdose is a very real phenomenon. Every year about 1000 people die as a result of drinking only alcohol that is not in combination with some other drug. Death, as with other downers, is a result of respiratory depression.

One of the biggest causes of alcohol overdose is drinking hard liquor. Two examples are Tequila, which is often drunk straight from the bottle with lemon and salt, and Whisky on the rocks. Drinking these two substances does not usually cause any extreme danger if it is done slowly. But for some hard-to-fully-understand reasons many people prefer to down their drinks in rapid succession. At least some of the reasoning is what is sometimes referred to as the "machismo" attitude, the art of looking manly and seeing how much liquor you can hold. This is a mistaken attitude many people have about the "machismo" ethic. The whole art here is actually to drink and show that you can "hold" your liquor, not see how much liquor you can hold before passing out or getting sick. The correct attitude is not to pass out or get sick, or you have blown it. This distorted concept of the "machismo" ethic even affects some women today: Some women may actually resent the fact that men are the only ones who are traditionally allowed to make themselves sick.

Alcohol, when consumed slowly, almost always has a built-in safety factor. This factor, which involves getting so stoned you can't pick up the glass, passing out or getting sick, naturally prevents you from taking in enough to overdose. But since it takes time to start to metabolize the alcohol, and for your system to realize that the alcohol is there to begin with, you can pervert the whole process by downing too much too soon, 15 shots of Tequila in 15 minutes, or chug-a-lugging a whole fifth of Whisky in 20 minutes could, depending on your body weight, your respiratory system's uniqueness and other factors, create an overdose. Drinking the same amount slowly, even if you could somehow manage to stay awake to do it, would have a profoundly lesser effect since all the while your liver is metabolizing the alcohol and helping to get it out of the system.

Of course, this takes for granted that you are not a complete fool and try to drink something other than grain alcohol (ethanol). Wood alcohol, or methyl alcohol, is poisonous, and most overdoses of this type happen to skid-row alcoholics who can't afford a bottle of the real stuff.

At a recent party which was given by a drug crisis center, one of the staff members drank too much Tequila (not an overdose amount per se) and passed out. The reaction of the other staff members at first looked over-dramatic. They carefully carried her into the bedroom, checked out her pulse and breathing regularity and vital signs. Then they carefully made sure that her sleeping position was with her head to one side, and not on her back. They re-checked her periodically for the next few hours after this.

This is important information to remember, since with parties and friends you will undoubtedly encounter a lot of drunken people, even if you yourself do not overdo it. The most important part of the procedure is the sleeping position (which is also important with other types of downers, such as barbiturates, which may make you vomit in your sleep). One of the most common alcohol-caused deaths is from involuntary inhalation of vomit into the lungs. So the next time someone says "Harry passed out in the other room," make a point to see that at least the sleeping position is right. For some strange reason, "sleeping it off" is thought of as a totally harmless state by most alcohol users.

One more problem that is worth mentioning, although it is not a heavy one, is the problem of stupidity by beer drinkers. Somehow the practice of dropping pop-top beer can rings into a full can of beer has become widespread. It is more easy than you can imagine to swallow that sharp piece of aluminum and have it lodge in your throat until you choke to death. The shape of pop-top rings is such that the usually lodge firmly and can't be dislodged by a sharp slap on the back. So much for that practice.



ALCOHOL AND THE BIOCHEMICAL MACHINE

Suppose for the moment that it's a Saturday evening, you're having a good time, and the first drink of the evening has just been placed in front of you. For the sake of this discussion let's say that drink is a bar Scotch (not necessarily a good Scotch, but it does contain the proper ingredient . . . namely 40% pure, 80 proof ethyl alcohol). The other ingredients are incidental and don't do all that much. Right now let's run that Scotch down through the body and find out what happens.

An honorable Scotch drinker partakes of his poison "straight." Other sacreligious sorts mix it with water, and (heaven forbid) even other types of mixers, but we are devout and follow true form. To some, the taste is still good, to others, awful.

The subject of taste brings up some interesting questions. Why do we like the stuff? Only the hardest of drinkers could palat pure ethanol. The initial experience of tasting alcohol is not often a great gustatory delight, even when the liquor is sweet. It's not much of a thirst-quencher. In fact, it actually serves to dehydrate the body. If some of our Western brews aren't bad enough for you, taste items such as arak, pulque, marc, subrouska, or kava. These international brews are complimented when simply referred to as awful. They do, however, still fill the prime requirement. They do get you high.

Well, like it or not the Scotch is on its way down your throat, irritating mucus membranes all the way. Reacting partially to this irritation and partially to the excitement in the room, your heart begins to beat a little faster. Finally, the drink reaches its first stopping point . . . the stomach.

Here the ethanol content begins to do its thing almost immediately. Rather than following channels and finishing its trip through the gastro-intestinal tract like other substances, the alcohol cuts through the red tape and is absorbed directly

through the gastric mucus membrane in your stomach. Fortunately, the amount absorbed at this time rarely exceeds 20%. Of course, if your stomach has other substances in it (i.e. milk, pizza, pot pies, or old kleenex) the absorption will be somewhat slower, and consequently you would get drunk slower. However, had you diluted that Scotch with some water, or, even worse, a carbonated beverage, the ethanol would have gone into solution and would have been absorbed even quicker through the mucus lining. The high becomes almost instant.

Ultimately, by the time it makes the bodily rounds, 90-98% of the ethanol ingested will be absorbed into the system. Your amazing abilities to excrete won't get you out of this one. You are forced to metabolize the bulk of the load. From the upper intestine, the major portion of the ethanol is absorbed. At this point, your body takes on the ethanol as a source of energy. Yes, One hundred percent alcohol has a caloric content of 7 calories per gram, or for the non-metric oriented, about 200 calories per ounce. Unfortunately, that's about all it has to offer because these calories are quite empty, containing no fat, protein, carbohydrates or vitamins and therefore no nutritional value whatsoever. In this capacity, however, alcohol is quite unique as compared to other drugs. It can serve as a source of energy, energy so efficient that it (or substances to which it is transformed by the body) actually serves to depress the appetite mechanisms of the body, thereby destroying appetite for food.

Part of this efficiency is simply because alcohol does not require as much biochemical processing as many other materials. However, fuel isn't the only requirement the body needs to maintain any degree of health, other factors are necessary. Besides just energy we need minerals, amino acids derived from proteins, and vitamins. That Scotch isn't going to provide much of any of these.

In spite of this we all know someone who seems to be the exception to the rule. The person who has made a hobby of drinking, ignored a proper diet and still seems to function at least adequately (it might even be you, for that matter). This is a tough one to explain. Part of this is due to biochemical individuality, the subject of later discussion, but in any case you can bank on the fact that if this person perseveres long enough, his or her strong body will rebel with some-

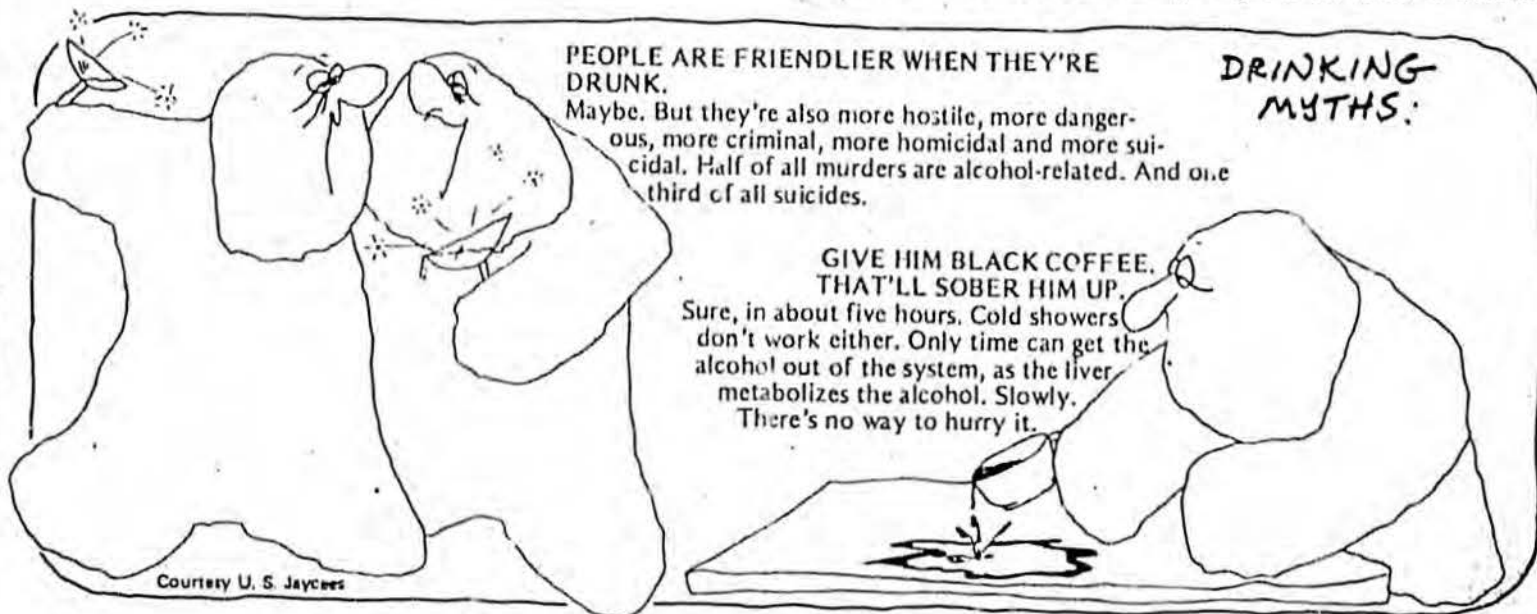
times disastrous results.

For the moment, however, we are still following the ethanol through the blood stream. Here the branches are many as ethanol affects virtually every part of the body, leaving no cell unturned.

As alcohol travels through the body in the blood stream, it rapidly diffuses from the capillary beds into all the body's tissues which contain water. The heart, being the marvelous instrument it is, circulates the ethanol-laden blood through the vascular system at a very rapid rate . . . usually 3 to four liters per minute (a liter is just a bit more than a quart). Now if you combine this circulation rate with alcohol's infinite solubility in water, its low molecular weight and easy diffusability, you can see how it rapidly distributes itself in bodily tissues. When the absorption from the gastro-intestinal tract is complete, within minutes the alcohol concentration throughout the entire body will be approximately equal. What this essentially means is that as long as there is any alcohol at all present anywhere in the body, it will be present everywhere in the body that contains water.

Considering that the body is two-thirds water we can now calculate alcohol levels in the body. For instance, if we are speaking of a body weight of 150 lbs., 100 lbs. of that weight or more can be attributed to water. Assuming that Scotch you drank awhile back to have been 2 ounces, this means that after absorption and excretory losses (10%) you would have in your blood stream about .72 ounces of alcohol. One fluid ounce of alcohol weighs about eight-tenths of an ounce. So, the amount in you body weighs .576: (150×16) oz. or about .024% (24/1000 of 1%). This is enough for some people to feel light-headed. If you only weigh 100 lbs., though this figure is increased by 50% and jumps to .036%. If you're lighter, it takes less to cause the same effect.

Alcohol consumption at this level may seem small, and in fact studies have indicated that simple sensory and motor capabilities are not affected until much higher levels are attained. Complex functions, such as those required by driving, are affected. These tasks require that several functions be performed at once such as control of speed, simultaneous with sensorimotor coordination, in order to keep a moving object on its proper course, or in braking. Performance of these were found to be impaired by as little as .05% alcohol to blood. Remember that the ratio to body weight is 1/3 lower or .033%.



This means that if you weigh only 100 lbs. that 2 oz. Scotch could impair your driving ability, or at the least, make you one lousy diamond cutter.

You're probably wondering now how you're supposed to get home if you can't drive. You're in luck. Due to the fantastic metabolising abilities of your liver that .72 ounces of pure ethanol started to disappear as soon as it entered. The liver changes the ethanol into carbon dioxide at a rate of about 1 ounce per hour. With this in mind you would be sober in .72 hours or a little over 43 minutes.

So now, you're sober again. This time it was simple. Nine oz. of the Scotch would have put you in the neighborhood of a 4 hour recovery after absorption. It gets to be time consuming after a while. Even then, it wouldn't be a safe bet to drive anywhere, due to the disorientation factors involved, and longer-lasting effects, like being drowsy from simply having fallen asleep when you were drunk.

ALCOHOL'S EFFECTS ON VITAMINS & HEALTH

To begin with, let's look at alcohol the way our bodies do . . . as food, a sort of non-nutritional food. One ounce of 100% pure ethyl alcohol (grain alcohol) has a content of over 200 calories. But these are empty calories, containing no fat, protein, carbohydrates or vitamins, and therefore have no nutritional value.

As a matter of fact, alcohol serves to deplete the body of what nutrition it had to begin with. Many of the complications arising from alcoholism can be associated more or less directly to a vitamin deficiency. For example, B Complex vitamins, which alcohol all but depletes completely, act as cofactors or as parts of a whole coenzyme molecule in specific enzymatic systems. This means that enzymatic and metabolic defects can exist as a result of chronic alcoholism.

Now, while these problems usually do not occur in the social drinker, they are very serious (actually, the main cause is malnutrition which usually accompanies alcohol addiction). Long term usage of alcohol enhances the metabolic removal of vitamin B₁ (thiamin pyrophosphate). B₁ deficiencies are known to result in polyneuritis, a neurological disorder, and beriberi, a cardiac problem.

Another B complex vitamin effected is B₆ (pyridoxine). This vitamin is required for transaminations and decarboxylations, two processes of major importance in the metabolism of the central nervous tissue. B₆ deficiency occurs in many bodily disorders, dermatitis, anemia, and epileptic seizures, to name some. In alcoholics it is most often seen in delirium tremens (an alcohol withdrawal symptom).

Other B vitamins affected are Niacin (nicotinic acid), pantothenic acid, B₁₂ (cobalamin) and B₂ (Riboflavin). Niacin in massive doses is used in the treatment of schizophrenia. A deficiency of this vitamin (also known as B₃) can result in many of the same neurological problems as B₆. Pantothenic acid in conjunction with other vitamins aids in many enzymic duties. Deficiencies in B₁₂ lead to easy fatigue, and a thousand other related problems. The last, riboflavin, is affected quite differently. Alcohol seems to cause the body to hoard this vitamin; the exchange hardly seems fair, though.

B vitamins are not the only ones affected. Alcohol has

20 ALCOHOL

A Partial List of Alcohol-Related Illnesses.

GASTROINTESTINAL	MUSCLE
Esophagitis	Alcoholic myopathy
Esophageal carcinoma	
Gastritis	HEMATOLOGIC
Malabsorption	Megaloblastic anemia
Chronic diarrhea	
Pancreatitis	VITAMIN DEFICIENCY DISEASE
Fatty Liver	
Alcoholic hepatitis	Beriberi
Cirrhosis (which may lead to cancer of the liver)	Pellagra
	Scurvy
CARDIAC	
Alcoholic cardiomyopathy	METABOLIC
Beriberi	
	Alcoholic hypoglycemia
	Alcoholic hyperlipemia
NEUROLOGICAL	SKIN
Peripheral neuropathy	Rosacea
Polyneuritis	Telangiectasia
Convulsive disorders	Rhinophyma
Alcoholic hallucinosis	Pellagra
Delirium tremens	Cutaneous ulcers

been shown to deplete the liver of its entire vitamin A (carotene) stores. Somehow the alcohol triggers a mechanism by which all the vitamin A is released from its stores at one time. High vitamin A concentrations are found in the blood for a short time, then none. All is metabolised out. Cirrhotic livers are poor in vitamin A. The lack of vitamin A is responsible for "night blindness" in some cases.

The concentration of Vitamin C (ascorbic acid) is also decreased, although the amount varies from organ to organ. One where the depletion is somewhat higher than others is the adrenal gland. This indicates that there is some degree of hyperactivity of this hormonal gland during intoxication.

Vitamin C raises the general resistance the body has against infections. Its deficiency in alcoholics has not yet been clearly correlated to their increased susceptibility for disease, however.

This list could go on, but the point is made. Alcohol also decreases to some extent the ability of the body to absorb new vitamins. Consequently, when supplements are required, large doses must be used. Throw in some of the alcohol storage disorders and absorption of vitamins becomes even more difficult.

As you've probably guessed by now, one of the treatments of alcoholism, both chronic and acute, is large doses of vitamins, particularly the B complex vitamins. Studies have shown large doses of B₁, B₆, niacin, pantothenic acid and B₁₂ along with a high caloric diet has worked very well in treating polyneuropathy associated with chronic alcoholism. In all cases doses many times the normally required amounts are given. This includes multivitamin supplements as well which are injected intramuscularly, intravenously, or given orally. The latter is sometimes inefficient, however.

If the patient shows signs of central nervous system involvement, such as Wernicke's syndrome, very large doses of thiamine (300-600 mg daily) is usually given intravenously as soon as possible. Any delay in treatment could result in irreversible damage.

Large doses of Vitamin E (tocopherol) provides partial protection from hepatic steatosis of the liver during intoxication. More effective than E is another antioxidant, G-50.

The best protection from alcohol, of course, is not to drink too much to begin with and to eat good foods, as well as take sufficient vitamins. Beyond that, you're on your own.

HOW MUCH IS TOO MUCH ALCOHOL?

The answer to this question depends on which researcher you are studying. Some investigators work on the premise that any amount of alcohol will cause damage, while others, who seem to more properly understand what the body can handle and metabolize, suggest two to three ounces of absolute alcohol is about where you really start hurting yourself at any one time. In combination with other drugs, particularly the downers, you can cut this minimum figure considerably, and even add the possibilities of overdose.

Despite the diseases, the nutritional deficiencies, and the tendency towards addiction, what the alcohol scene seems to amount to today in terms of street people is that as a drug of choice, it is *NOT* the least harmful recreation. We all know already about the horrors of alcoholism, and we all know from one to a dozen alcoholic hypocrites who condemn other chemical substances entirely on the base of legality, rather than actual known harm.

Obviously, to be as free as possible from chemical harm today one would have to adopt a saintly non-drug using attitude about nearly everything. (Then, all you'd have to worry about is food additives, even in your "health" food, not to mention uncontrollable outside pollutants, etc.). If you can lead such a good life, more power to you. If you can't and this includes the majority of the people, you are going to have to do some very heavy thinking on drug of choice. With the drinking age lowered in most states, this is even more critical an issue than ever before in modern history.

We hope that the brief glimpse we've given you into the many complex biochemical problems of alcohol has just been sufficient to give you an idea of what you are really up against in terms of understand how this drug works. It's up to you now . . . start digging through those books. And never, ever let anyone try to tell you that alcohol is indeed the "safe" drug that the billboards would lead us to believe. Remember . . . It's the water . . . and a LOT more!

CONGENERS IN ALCOHOL

Each day, I bemoan the death of simplicity. You remember, don't you? "The good old days," those times of old when food was fresh or not at all and chemical additives lay far, far ahead. Those days, as evidenced by the label on any food stuff, are gone forever. Nothing, (well, almost nothing), is held sacred by the almighty gods of synthetic and natural chemical addition. No friends, not even our purest of all time . . . alcoholic beverages.

As a matter of fact, even in the days of old when the only chemical added to beer and wine was a bit of saliva, (to

provide the proper enzymes for fermentation), the finished product contained a large number of chemical agents. Some were harmless, some were not so harmless, but all contributed to the taste, color, texture and aroma of the final brew. These synthetic additives are the topics here.

THE BEER FACTS

More beer is consumed per capita than any other alcoholic beverage. In days long past, it consisted mainly of a little yeast (or saliva), fermented grain, hops and water. Today's beer is a soup of chemicals. They are added to preserve, stabilize, enhance flavor, produce and promote foaming, plus much, much, more.

ACACIA (Gum Arabic): Acacia is used by many breweries to stabilize the beverage to prevent any alteration in flavor or color before it is sold. It also promotes the foaming quality of the beer. Acacia is derived from gummy sap produced by the acacia Senegal tree. Although it is used pharmaceutically as a suspending agent, it has been known, in some cases, to cause allergic reactions in certain individuals.

SODIUM HYDROSULFITE: This is a grayish-white salt of hydrosulfurous acid. It is added to beer to stop any deterioration in flavor that may occur once the brew is finished.

TANNIN (Tannic Acid): This material, which is also found in other alcoholic beverages and occurs pretty heavily in coffee and some teas, is a yellowish-brown substance. It is added to beer to remove the sediment that causes cloudiness in beer during the brewing process. Tannin has many medical uses as an astringent, an antidote for various poisons and for treating burns. It constricts tissue and blood vessels which impedes the flow of blood. In considerable amounts, it may cause liver damage and gastric irritation.

AMMONIUM PHOSPHATE: If you need a good fertilizer, or care to fireproof some cloth, or need a good soldering flux, ammonium phosphate might be just what you need. In the manufacture of beer, however, it is used to alter American water so it more closely resembles its European counterpart in flavor.

POTASSIUM METABISULFITE: Another protector of flavor, this one is an antioxidant that prevents further chemical change from occurring once the brewers have deemed their product perfect. Who are we to argue?

TARTARIC ACID: Some batches of beer are so cloudy and unappetizing once made, that few who had seen normal beer would drink the stuff. To get around this "ugly" beer, breweries sometimes add tartaric acid. This substance makes the particulate matter, causing the cloudiness, precipitate, leaving the familiar clearness we've all grown to love.

PAPAIN: This is an enzyme obtained from the papaya fruit. Its most familiar use is to tenderize meat. Those clever devils in the beer industry, however, have discovered that it will keep that precious golden drink from getting thick or clotting. Medically, it makes a great wart dissolver. Internally, though, it carries the chance of causing severe gastrointestinal problems. This chemical is one of the most widely used in the commercial manufacturing of beer.

MAGNESIUM SULFATE: Better known to most of us as epsom salts, this is the active ingredient in many of the so-called laxative waters. Brewers use these salts liberally to condition the water, believing it makes for a better brew. Unfortunately, large amounts of epsom salts can cause respiratory failure and kidney disorder.

DEXTRIN: Don't you just love those little bubbles that tickle your nose as you down that cold glass of brew? Well, you can thank dextrin, in part, for making all that possible. It is added to beer to insure a better head of light frothy bubbles. If that doesn't turn you on, it is also used in making matches, fireworks and explosives. (Ever hear of blowing your mind on one beer?)

COBALT: Up until now, we've only been talking about additives which are suspected of possible wrong doing, but with a few clear cut cases to prove it. Cobalt, as an additive, developed a record so dubious that federal laws in Canada and the U.S. forbid its use. In the late sixties, two breweries in the U.S. and Canada began using cobalt as an additive to prevent overfoaming. First they add dextrin to make the beer foamy and then they add cobalt to keep it from foaming too much. Oh, those brewers, will they ever be satisfied? Within the first year of cobalt use, 80 people were stricken with a strange form of cardiomyopathy, (degeneration of the heart muscle). Of these 80, 36 died. Clinical investigations found cobalt the likely suspect. These cases were exclusively confined to users of the brands of beer containing the cobalt additive and new cases stopped appearing one month after cobalt was withdrawn from the beer. Remember that when your beer foams over the edge of your glass.

THE BAD NEWS IN OTHER BREWS

HIGHER ALCOHOLS: There exists in all forms of alcoholic beverages a certain amount of the higher alcohols or fusel oils, as they are sometimes called. These occur not only in distilled spirits, but in wine and beer as well. The popular notion is that the longer you age booze, the less fusel oil will be present. It is only supposed to be in raw, unaged or bad batches. Not true. Like a great many other booze stories, it just doesn't hold up under analysis. In fact, there is data to show that the longer a beverage is aged, the more fusel oil it is likely to contain. Some people believe these higher alcohols are responsible for the objectionable taste, or the disagreeable aroma of spirits. Others believe they are responsible for the undesirable physical effects, such as vomiting, "Whiskey madness," or a rotten morning after. In most bourbons, the concentration of fusel oil rises from 1957 ppm (parts per million) at four years, to 2109 at 6 years and 2150 by ten years.

Some of the higher alcohols represented in this bunch are propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl and their various isomers, together with even more complex alcohols. In some cases, you can even have some of the lower alcohols, such as methyl.

PHENOLS: Included in the fusel oil family, are many of the phenols. Most of these are produced during the exposure of the basic materials to the heat created by fermentation or are extracted from the charred wood of the barrel in which the booze is aged.

Remember, the only alcohol which is relatively safe is ethyl alcohol or grain alcohol, as it is also known. All these other higher alcohols are considered poisonous.

CARBONYL COMPOUNDS: Many aldehydes are produced in the process of making those wonderously aged liquors. Among these are formaldehyde, (remember the preserved frog in biology?) and acetaldehyde. You can also throw in a few ketones for good measure. These include goodies such as acetone, acetoin and methylethyl ketones, (one great paint

22 ALCOHOL

remover). As with the higher alcohols, the concentration of these compounds usually increases during routine aging procedures.

ACIDS: The volatile acids identified in distilled spirits include formic, acetic, butyric, valeric and a number more, all of which appear in the original distillate. Nonvolatile acids also occur, but mainly these are derived from the wooden storage barrels.

ESTERS: Although ethyl acetate occurs as the principal ester in most spirits, others may be more important in determining aroma, taste and palatability. These include methyl, ethyl, butyl, isobutyl, etc.

TANNIS: Unlike beer and wine, whiskey and brandy contain relatively small amounts of tannis, and gin and vodka contain none. Strangely enough, this is proportional to the rate of absorbancy. The alcohol in wine and beer is absorbed slowly from the intestinal tract, whereas in whiskey and brandy, it is absorbed more rapidly from the stomach and duodenum. Vodka and gin are absorbed the quickest of all.

TOTAL SOLIDS: Analysis of some of the solids in alcoholic beverages is disgusting and doesn't lend itself to brief discussion. However, the concentration of solids in any beverage seems to be related to speed of absorption by the body. The concentration is greatest in beers and wines and lowest in gin and vodka. Most seem to sprout from the wooden storage barrels.

What's been covered here, of course, isn't the whole story, but it does give food for thought about some of the substances which cross our lips when we drink. Paranoia, in moderation, has its place, (not to be confused with being leery of the ice water bottle after seeing the motion picture, *Jaws*). So stay tuned, keep your mind open, and keep reading. You will be a lot healthier in the long run as long as you know how every substance you consume affects your body's biochemical machine.

ALCOHOL "ISM": WHAT YOU MIGHT THINK IT MEANS, WHAT IT REALLY MEANS, HOW TO TELL

It is probably safe to say that almost everything you have ever seen or read about alcohol problems has been on alcoholism. There are hundreds of pamphlets, books and advertisements based on the theme "Ten Ways to Tell if You Are an Alcoholic."

If you listen to all the advice you may think you are an alcoholic after the first drink. One example is: "If you think about drinking, you may be an alcoholic," followed by the statement "If you drink without thinking, you may be an alcoholic."

There are two types of drinkers today: People who don't think they are alcoholics (which includes all non-problematic drinkers plus 80% of actual alcoholics), and people who know they are alcoholics. This latter group usually calls themselves "arrested" alcoholics, which means that their problem is not gone, but is at least under control at this time.

Arrested alcoholics have various attitudes about alcohol. These vary from viewing alcohol in all forms as a poison to which they are allergic (prohibiting use of after-shave, etc.), to much less totalitarian attitudes. Some alcoholics have even been taught, through controlled behavioral programs, to be

DRINKING MYTHS:

MOST SKID ROW BUMS ARE ALCOHOLIC.
No. See? You just can't count on stereotypes. A recent study found that less than half the derelicts on skid row had drinking problems.

MOST ALCOHOLICS ARE SKID ROW BUMS.
Only 3% to 5% are. Most alcoholic people (about 70%) are married, employed, regular people. All kinds of people.

Courtesy U. S. Jaycoes

able to socially drink once more without going off the deep end after one or two drinks. But this also is rare.

Almost all arrested alcoholics will tell you that alcoholism is a disease. This rationale is being argued all over the world (principally by those who are not alcoholics) but the important point is that nobody knows for sure how to class it properly. For one thing, to be truly a disease it should have nothing causal to do with alcohol, but is something inherent in the individual; this would mean that the same individual might be just as likely to be a heroin addict or other heavy substance abuser if given different social settings. Despite this logic, most arrested alcoholics feel that if alcohol never existed they would otherwise be normal. So what it may actually be is a combination of physical and psychosocial addictions that overall defy simply one-word classification.

One single type of treatment or rehabilitation is not right for everyone. Alcoholics Anonymous is the most famous. AA involves a simple setup of meetings where members admit their helplessness over alcohol and back up each other when the temptation to drink arrives. Since the type of alcoholic will vary greatly, some alcoholics work well in this setting; others are not willing to admit helplessness and work to resolve their problems in other ways. They may or may not be successful.

The systems set up for care and treatment of alcoholics in North America vary from area to area. Prior to long-term therapy or live-in many alcoholics start out in detoxification centers, where they are brought originally in an acutely intoxicated state. Some of these are called "medical detoxification centers" which utilize a hospital setting in which the patient can be watched 24 hours a day for several days in case complications set in. Others, called "non-medical detoxification centers," utilize a home-like setting which is more relaxed than a hospital, and the patient is detoxified without medication but is watched closely for medical complications just in case. In this latter setting, a competent professional medical person is always readily accessible if needed. And then again, there are many programs which are somewhere halfway in-between these models.

HOW TO TELL

Now that you have probably already read, digested and rejected much of the standard depressing alcoholism literature, let's take a more realistic look at just exactly who may be an alcoholic.

Every human being is unique and different; so it stands to reason that every case of alcoholism is differently motivated and is in some way unique. This accounts for so many problem drinkers not realizing that they have a problem.

You know the symptoms already, and many of them are already listed elsewhere in this text. Problem drinking can start for many reasons. If you drink to get rid of depression, boredom or loneliness, or because your problems seem insurmountable, this may lead to hitting the bottle again, and again, and again. Or if you develop a pattern without knowing it, drinking every night, night after night, either at home or in a bar, even if it is for no reason that you can name you can still develop an addiction. After all, it is an unbroken pattern that sets you up for a heavy physical addiction in most cases.

Occasionally people have a condition that can not be adequately explained by medical science, and they become alcoholics because of it. This is a phenomenon whereby a person starts drinking and cannot set down the bottle for days. For these people there is no such thing as moderation. As many theories exist about this condition as there are people afflicted by it. The most common causes may be a combination of emotional disturbances (including self-destruction) and a certain physical incapacitation to stop that begins with the first drink. This book is not for these people, obviously.

The biggest single reason problem drinkers or alcoholics don't admit to their problem is because of the social stigma attached to the term itself. "Alcoholic" brings visions of sick, skid-row bums whenever it is mentioned. It brings flashes of mental hospitals, hopelessness and social ostracism in most cases. Most people won't admit to themselves that they are sick . . . much less mentally sick.

The good news is that, unless a mental problem existed before the introduction of alcohol, the average alcoholic is no more "sick" than the rest of us . . . but is simply addicted

to a physically addicting chemical. Availability, social pressures and advertising make alcohol a quick, easy "solution" to many problems that are either real or imagined. There is nothing wrong about admitting it and seeking help if it is needed.

An important point to always remember if you are strung out on alcohol is that if the addiction is heavy enough you may be chancing delirium tremens (DT's) if you try to detoxify yourself. If you are in any fair sized community, though, you should be able to seek advice in a rational way from one of several sources.

One of the problems with alcohol addiction is what to do after you've put it down. Alcohol tends with some people to chemically imbalance the system, and this often leads to depressions. Some alcohol groups and clinics have for the past twenty years been using megavitamins — usually large doses of niacin and vitamin C, along with a properly balanced diet. If your head is clear and undepressed, naturally the temptation to drink is greater. For information on the megavitamin approach, write to the Huxley Institute in New York (address in the following section).

ALCOHOL— SOME PERSPECTIVES IN THE U.S.

Over some 50% of the total population (some 100-110 million people) use alcohol in some form for recreational purposes. 250,000 or more people, as of 1973, were dying yearly from alcohol, its illnesses, and related crime. Additionally, there are nine million alcoholics estimated by authoritative sources, undoubtedly going on ten million by now.

Consequently, with so many people using alcohol, the tendency of the majority is to ignore medical facts on the subject, out of unconscious fear of finding out that they may be killing themselves prematurely. Let's hope that you as the reader are a little more gutsy than that.

By comparison, all the big-to-do about other drugs of abuse seems like a molehill. 30 million marijuana users, for example, who are destined to probably outlive the alcoholics, and not get all those strange diseases, either. 3000,000 Heroin addicts, give or take 100,000. All the rest of the drug statistics are pretty stuff indeed if they are only put on a pharmacological scale with alcohol — the most deadly killer in the Western world today. It may be easy to get "but it just ain't hip."

ORGANIZATIONS TO CONTACT FOR HELP OR INFORMATION

There are literally thousands of alcohol information and treatment programs in North America. However, the following names and addresses will help you find exactly the information or program you are looking for.

NATIONAL INSTITUTE FOR ALCOHOL ABUSE AND ALCOHOLISM, P.O. Box 2345, Rockville, MD 20852. (Information on all alcohol programs in North America. Write to them also for government publications on alcohol, and they will be happy to provide you with a list of them. This is the central clearinghouse for all alcohol and alcoholism information in the United States.)

OPERATION THRESHOLD, U.S. Jaycees, Box 7, Tulsa, OK 74102. (Operation THRESHOLD is a national venture of the Jaycees to teach responsible drinking. For more information please write to them. The "Drinking Myths" cartoons in this book are courtesy this program, and we are indebted to the Jaycees for their assistance.)

ALCOHOLICS ANONYMOUS: Contact chapters in most major cities, and many small ones, throughout the U.S., Canada and other parts of the world.

NATIONAL COUNCIL ON ALCOHOLISM: Local chapters are listed in most directories of major cities.

DO IT NOW FOUNDATION, Institute for Chemical Survival, P.O. Box 5115, Phoenix, AZ 85010. Printed information on chemicals of all types, including alcohol and most major drugs of abuse, both legal and illegal. A catalog is available on request.

HUXLEY INSTITUTE FOR BIOSOCIAL RESEARCH, 1114 First Ave., New York, NY 10021. (Information on megavitamin therapy as an approach to the treatment for alcoholism.)

CANADA:

ADDICTION RESEARCH FOUNDATION OF ONTARIO, 33 Russell Street, Toronto, Ontario, Canada. (Information on Canadian treatment organizations, and publisher of much information on alcohol and alcoholism.)

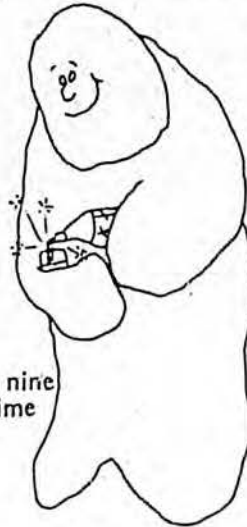
CANADIAN SCHIZOPHRENIA FOUNDATION, 2135 Albert Street, Regina, Sask., Canada. (Information on megavitamin therapy as an approach to the treatment of alcoholism.)

INTERNATIONAL:

INTERNATIONAL COUNCIL ON ALCOHOL AND ADDICTIONS, Case postale 140, 1001 Lausanne, Switzerland. (Information on alcohol programs worldwide, technical works and proceedings of international conferences on alcohol.)

DRINKING MYTHS

DRINKING MYTHS:



THANK GOD MY KID ISN'T ON DRUGS!
If he's hooked on drinking, he's on drugs. With nine million Americans dependent on alcohol, it's time we stopped pretending it isn't a drug.

IT'S RUDE TO REFUSE A DRINK.
Nonsense. What's rude is trying to push a drink on someone who doesn't want it. Or shouldn't have it.

IT'S IMPOLITE TO TELL A FRIEND HE'S DRINKING TOO MUCH.
Maybe if we weren't all so "polite", we wouldn't have so many friends with drinking problems.

ALCOHOLISM IS JUST A STATE OF MIND.
It's more than that. It's a very real illness, and there is scientific evidence that physiological dependence is involved.

A FEW DRINKS CAN HELP YOU UNWIND AND RELAX.
Maybe. But if you use alcohol like a medicine, it's time to see your doctor.

Courtesy U. S. Jaycees

THE FIRST ROUND SHOULD BE A "DOUBLE" TO BREAK THE ICE.

Breaking the ice is a job for a good host and hostess . . . not for a bottle. You must have more to "give" your guests than just alcohol.

MIXING YOUR DRINKS CAUSES HANGOVERS.

The major cause of hangovers is drinking too much. Period.

INDIANS CAN'T DRINK.

Some can, some can't. Just like Caucasians.

JEWS DON'T DRINK.

Some do, some don't.

PEOPLE WHO DRINK TOO MUCH HURT ONLY THEMSELVES.

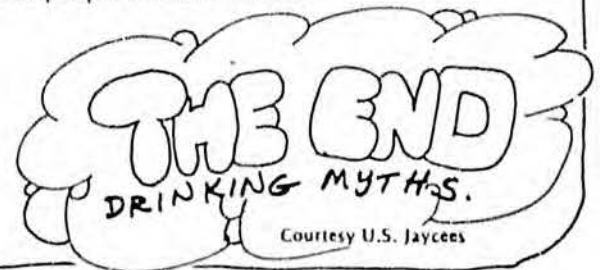
And their families. And their friends, and their employers, and strangers on the highways. And you.

YOUR KIDS WILL LEARN WHAT YOU TELL THEM ABOUT DRINKING.

Ha ha. Your kids will learn what you show them about drinking. If you drink heavily; if you get drunk; the chances are your kids will follow the same example.

NEVER TRUST A MAN WHO NEVER TAKES A DRINK.

You know that's silly. Yet many of us are a little nervous around people who don't drink.



Courtesy U.S. Jaycees

You Are What You Drink

Dear Reader,

Let us try to read your mind. Right about now, you may be thinking that this is another dull, boring book on alcoholism. And we're going to tell you all sorts of gruesome facts that aren't relevant to YOUR life.

Well, SURPRISE! This book isn't primarily on alcohol-ISM at all! It's all about alcohol as a DRUG — or in essence a look at the pharmacological qualities of this unique substance, plus a few of the social and legal aspects.

The big thing is, of course, that we are NOT going to try to talk you out of drinking. That's right. By the time you finish this book, we hope you will be well on your way to making rational decisions based on factual, hard data, not just the myths of the past or the morals of your ancestors.

Sound interesting? You bet it is! Alcohol is all around us, so why can't we learn to drink without becoming problem drinkers or alcoholics, or dying young of strange maladies? The problem is that, in uncovering the facts behind the rumors behind the myths, we have unleashed a whole new set of pharmacological truths that may complicate your life at first. But, dear reader, when you finally finish digesting them you may have a whole new outlook on this chemical.

This is NOT a book for the alcoholic per se. And this is not especially a book for the total abstainer. But if you are anywhere inbetween, as most of us are, you may find it quite enlightening. At least that is what we hoped to accomplish.

Here's to your chemical consciousness! And remember, you are what you drink.

DO IT NOW



Foundation

A National Non-Profit Organization for Chemical Survival Education and Health Information