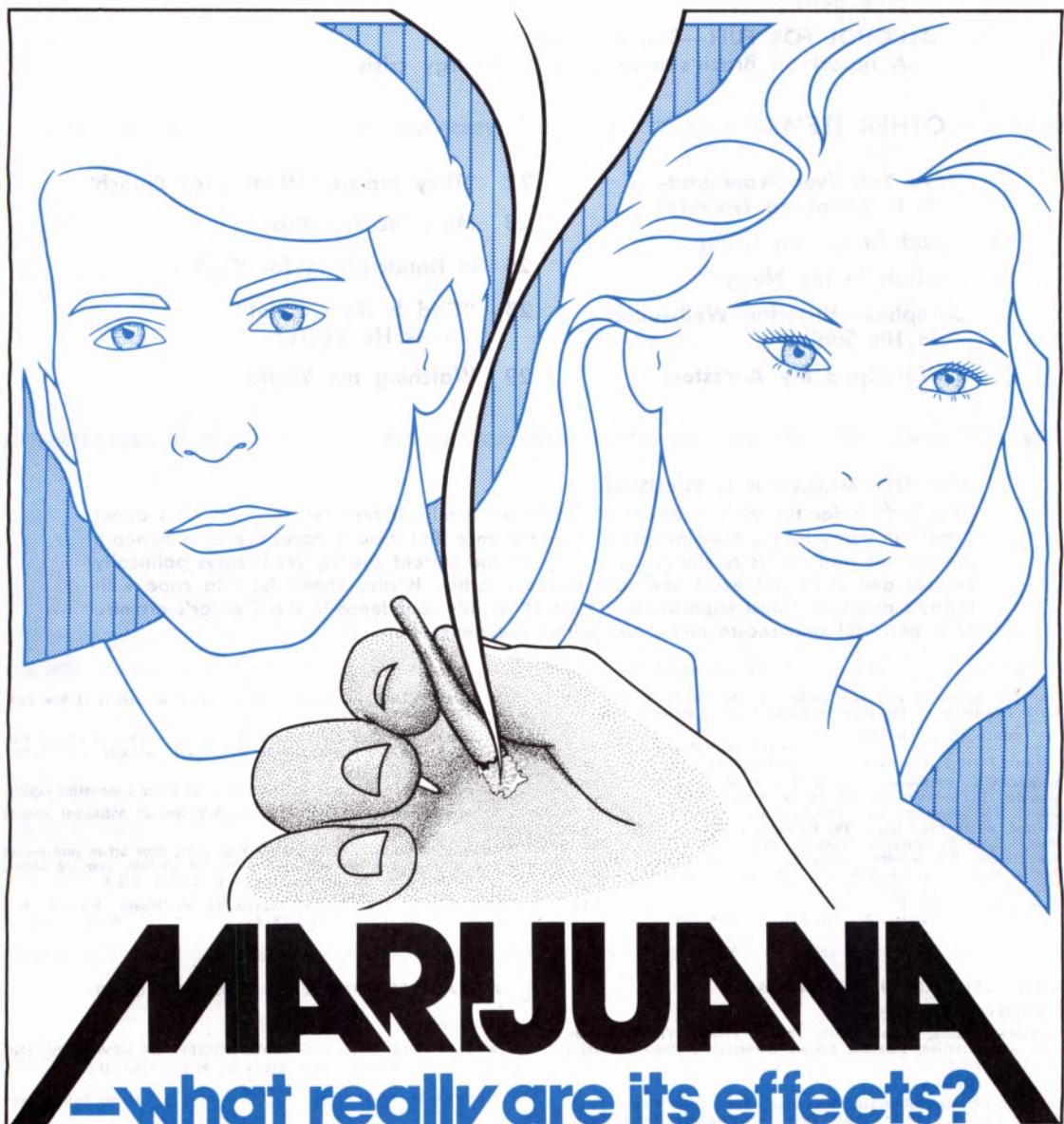


Awake!

AUGUST 8, 1980



MARIJUANA

—what really are its effects?

FEATURE ARTICLES

5 MARIJUANA—Why the Conflicting Views? What Really Are Its Effects?

It is widely used, especially among young people. Some persons argue that, moderately used, it is no more harmful than alcohol. What are the facts? Recent research has caused a dramatic change in viewpoint on the part of experts.

12 ALCOHOL FOR FUEL—The Answer?

A report on Brazil's answer to the energy crisis

OTHER ITEMS

- | | |
|---|---|
| 3 Have You Ever Wondered—
Is It Wrong to Gamble? | 22 "They Practice What They Preach" |
| 11 Good Advice on Living | 23 Meet the Negritos |
| 15 Animals in the News | 25 Is Handcrafting for You? |
| 16 Josephus—Historian Well-suited
to His Subject | 28 "God Is My Copilot"
—Is He Yours? |
| 20 I Worshiped My Ancestors | 29 Watching the World |

WHY THIS MAGAZINE IS PUBLISHED

"Awake!" is for the enlightenment of the entire family. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it stays politically neutral and does not exalt one race above another. It also shows how to cope with today's problems. Most importantly, "Awake!" builds confidence in the Creator's promise of a peaceful and secure new order within our generation.

The Bible translation used in "Awake!" is the modern-language "New World Translation of the Holy Scriptures," unless otherwise indicated.

Ten cents (U.S.) a copy

Watch Tower Society offices	Yearly subscription rates for semi-monthly editions in local currency
America, U.S., Watchtower, Wallkill, N.Y. 12589	\$2.50
Australia, 11 Beresford Rd., Strathfield, N.S.W. 2135	\$2.50
Canada, 150 Bridgeland Ave., Toronto, Ontario M6A 1Z5	\$3.00
England, Watch Tower House, The Ridgeway, London NW7 1RN	£3.00
Hawaii, 1228 Pensacola St., Honolulu 96814	\$2.50
New Zealand, 6-A Western Springs Rd., Auckland 3	NZ\$3.00
Nigeria, West Africa, P.O. Box 194, Yaba, Lagos State	N2.40
Philippines, P.O. Box 2044, Manila 2800	P17.50
South Africa, Private Bag 2, Elandsfontein, 1406	R3.60
(Monthly editions cost half the above rates.)	

Copyright © 1980 by Watchtower Bible and Tract Society of New York, Inc. All rights reserved.

Remittances for subscriptions should be sent to the office in your country. Otherwise send your remittance to Watchtower, Wallkill, N.Y. 12589, U.S.A.

Notice of expiration is sent at least two issues before subscription expires. Second-class postage paid at Brooklyn, N.Y. and at additional mailing offices.

CHANGES OF ADDRESS should reach us thirty days before your moving date. Give us your old and new address (if possible, your old address label). Write Watchtower, Wallkill, N.Y. 12589, U.S.A.

POSTMASTER: Send address changes to Watchtower, Wallkill, N.Y. 12589. Awake! (ISSN 0005-237X) Printed in U.S.A.

NOW PUBLISHED IN 34 LANGUAGES

SEMIMONTHLY EDITIONS

Afrikaans, Cebuano, Danish, Dutch, English, Finnish, French, German, Greek, Iloko, Italian, Japanese, Korean, Norwegian, Portuguese, Spanish, Swedish, Tagalog

MONTHLY EDITIONS

Chichewa, Chinese, Hiligaynon, Malayalam, New Guinea Pidgin, Polish, Sesotho, Swahili, Tahitian, Tamil, Thai, Twi, Ukrainian, Xhosa, Yoruba, Zulu

AVERAGE PRINTING EACH ISSUE: 7,650,000

Published by

WATCHTOWER BIBLE AND TRACT SOCIETY OF NEW YORK, INC.
117 Adams Street, Brooklyn, N.Y. 11201, U.S.A.

Frederick W. Franz, Pres.

Grant Suiter, Secy.

Have You Ever Wondered

Is It Wrong to Gamble?



LOTTERIES, betting on horses and other forms of racing, games of skill and of chance—all affect the lives of countless millions of persons every day. Of course, gambling has always been present in human society. But today it plays a bigger role in life than it did years ago.

WHY IS GAMBLING SO POPULAR TODAY?

There are several basic reasons. In the 20th century increased emphasis has been put on material possessions, and modern technology has made them available in varieties and quantities never possible before. Air flight has also made travel to distant places easier. But these things all require money. Gam-

bling holds out the lure of "easy money," lots of it.

The promise of large prizes has a powerful influence. The biggest lottery in the world, Spain's El Gordo, "The Fat One," annually pays out about £200 million (\$460 million, U.S.) at Christmastime. Last year, members of a Roman Catholic Church in Granollers netted £40 million (\$92 million, U.S.) as a result of the sale of some of these lottery tickets by their priest. In Britain, a record sum of just under £1,000,000 (\$2.3 million, U.S.) was paid to a man in February 1980 as a football-pool dividend. As prizes get bigger the inducement becomes stronger.

Then there is the excitement related to gambling. In a world where problems weigh heavily, some find that flights of fancy into a world of wealth add spice to living. After all, somebody has to win. "It could well be me!" each gambler feels.

WHO REALLY WINS AT GAMBLING?

Prizes can be large or small, but it is obvious that the gambling promoter is always on the winning side, otherwise he would be unable to operate. The case of a man in England illustrates this. After he got thousands of pounds in a winning streak at horse-race betting, he was banned for life from his local betting shop. Why? As the manager said: "His business had become uneconomical for us."

"What about the years I was losing?" lamented the customer. "They welcomed my money then with open arms." Ah, but that was a different story!

Even a big win does not necessarily bring happiness to the one who gets it. Once the news leaks out, begging letters and "friends" often descend. When a married couple won the biggest-ever prize on the French National Lot-

tery, they decided to share their "luck" with their family. To each family member they gave a sizable sum of money. But disputes over the way the money had been divided soon led to fights and the eventual breakup of the family. Later, in an effort to protect his property, the husband took to sleeping with a revolver under his pillow. Waking up one night, he saw a figure outlined by the window. Mistaking his wife for a burglar, he shot and killed her.

"I will never buy another lottery ticket," vowed the widower. Money cannot buy contentment and family unity.

Of course, not everybody becomes a compulsive gambler, but the danger is real. As "Gamblers Anonymous" points out: "Once a man is in the grip of this addiction [gambling], he has lost all control, all sense of moral values." In every respect, such a person is the loser. When so much is at stake, how much wiser not to get involved in the first place!

WHY DOES GAMBLING STILL CARRY A STIGMA?

Although many people may envy one who wins at gambling, they are more inclined to respect and trust a man who is a hard worker. Their viewpoint is often a result of experience. The Bible also recommends honest work instead of relying on chance. "Do you know a hard-working man? He shall be successful and stand before kings!" So said wise King Solomon in summing up the matter.—Prov. 22:29, The Living Bible.

Similarly, the apostle Paul, in writing to Christians at Ephesus, advised that a man should do "with his hands what is good work." In that way, Paul adds, he may also "have something to distribute to someone in need." How much

finer to be giving under those circumstances than from money won by chance! —Eph. 4:28.

In many countries gambling has attracted criminal elements and, as a result, much corruption. Even where this is not so, the temptation to be dishonest usually presents itself somewhere along the line. As one scientist put it: 'Defrauding a lottery is easy with a little scientific knowledge.' It is a fact that wherever luck and chance are involved, the likelihood of somebody's tampering with the results cannot be ruled out.

The stigma of gambling is clearly reflected in the Jewish Mishnah. Among those disqualified from being either witnesses or judges was "a dice-player." Why this prohibition? Simply because such men were considered to be morally unreliable and, possibly, to have their judgment impaired. In most branches of society, involvement in gambling still carries with it a stigma.

IS GAMBLING A RESPONSIBLE USE OF OUR ASSETS?

"Getting rich quick" can warp an individual's thinking. Even though there is more money, family ties often suffer.

Money is an asset, just like time, health and ability. Even if we are not motivated by greed and feel that no economic hardship will come to us or to our families from our gambling, we do have a further moral responsibility to consider. The Bible urges us to "work at good, to be rich in fine works, to be liberal, ready to share." Only in this way, it reminds us, can we ever get a "firm hold on the real life." (1 Tim. 6:17-19) A Christian seeks to accomplish as much good as he can with the wise use of his time and whatever money he has. For him, this is reason enough to shun gambling, whatever its form, however large or small the stakes involved.



MARIJUANA

—why the conflicting views? —what really are its effects?

By "Awake!" correspondent in Canada

OF ALL the drugs that have been used throughout the centuries none has caused more controversy in recent years than marijuana. Defenders of its use cite various studies and argue that it is not dangerous as are other drugs. Thus, they would make a special case for marijuana.

Opposers of its use cite their own sources and disagree as to the interpretation of

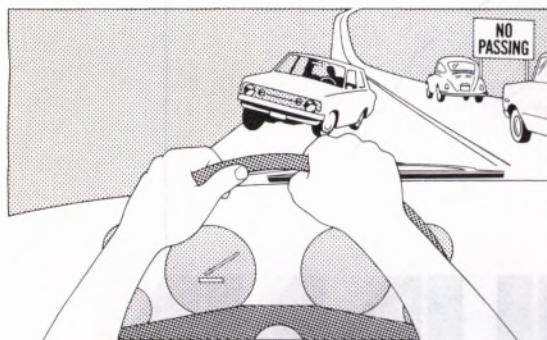
certain other studies. Indeed, a verbal and printed battle seems to be constantly going on as to whether marijuana is harmful at all if used moderately. Is there any way to be sure?

There is an ever-increasing use of it, even in public, nowadays. Its use by those with higher education and professional status makes it seem different to some, even

fashionable. And now, 11 American states have altered their laws so as no longer to consider mere possession of a small amount of it a crime. Lighter civil penalties are now applied to first convictions. Does all of this mean that marijuana is becoming more accepted and that in time it will share a status like that given to nicotine, caffeine and alcohol?

What Is Marijuana?

Marijuana is a drug prepared by drying the leaves, flowering tops, stems and seeds of the hemp plant known as *Cannabis sativa*. Hence, the name sometimes used for it: cannabis. Its common name is "pot."



**'a driver stoned on marijuana
is dangerous'**

In India it is called *bhang*. Hashish is another form of cannabis, made from the resin of the plant and usually pressed into the form of blocks or chunks of varying potency. Hashish and an oil made from it are of greater strength than marijuana.

The history of marijuana use in China reaches back some 4,000 years. It spread to India, where it came to be used in religious ceremonies. In some places its use was medicinal. But in Egypt, the effects that Napoleon saw from its use moved him to ban it there following his conquest. With such a long history, is it not possible now to know if marijuana is indeed dangerous to health and well-being? Why all

the skirmishes between advocates and those who would ban its use?

Contradictory Reports

As recently as 1975, the usually objective *Consumer Reports* seemed to indicate that the drug was relatively harmless. A report in Canada by the LeDain Commission (1973) implied the same. A U.S. government report, *Marijuana: a Signal of Misunderstanding*, along with a few other publications similar to it, such as *Marijuana Reconsidered*, have caused some persons to say that there is no conclusive evidence of physical damage or interference with the body's processes even when large amounts are used.

Experts who felt it to be innocuous have been quoted freely: Dr. David H. Powelson, formerly chief of psychiatry, University of California at Berkeley; Dr. Harold Kalant of the University of Toronto; Dr. Robert L. DuPont, formerly of the National Institute on Drug Abuse in the United States. There were also others. Frequent references to these have been made to show that there is no valid basis for concern over the increasing use of marijuana.

However, all along, warnings have been sounded: The World Health Organization has kept up its declarations against the use of marijuana. In 1972, Dr. Olav J. Braenden, director of the United Nations Narcotics Laboratory in Geneva, Switzerland, warned that marijuana is a dangerous drug. He based his conclusions on the findings of 26 laboratories in various parts of the world.

Yet, the general idea in the 1960's and the early 1970's was that not enough was yet known to say with any certainty that marijuana was harmful. Of course, there is a big difference between saying that something is not yet *proved* to be harmful and saying that it is indeed *harmless*.

A number of drugs that were at one time thought to be harmless, even bene-

ficial, are not now viewed that way at all. Heroin and barbiturates, for example, were once thought to be a blessing to medicine, but that is not now the case with either drug. It should not be overlooked that even one of the foremost advocates of decriminalization of marijuana, Keith Stroup, executive director of the National Organization for the Repeal of Marijuana Laws (NORML), is reported as admitting: "There's a lot that we still need to know about the drug."

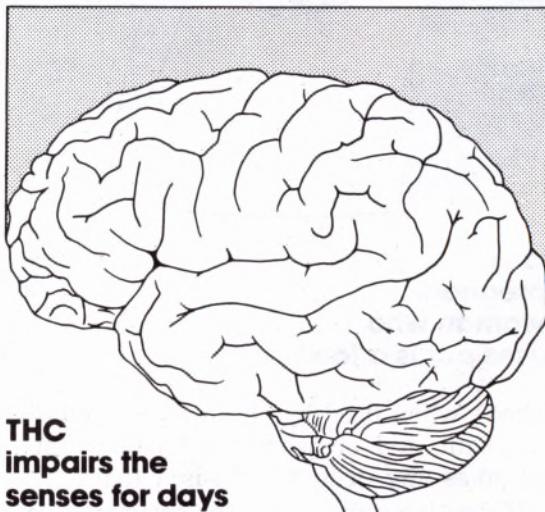
But why the obviously contradictory reports? Why have sources viewed as authoritative been on opposite sides in the controversy? Dr. Andrew Malcolm, a psychiatrist with more than 20 years of experience in dealing with drug-dependent people, explains: "Part of the confusion over cannabis today is due to the well-publicized and broadly accepted early experiments—notably the ones in the late 60s. These suggested that cannabis was a relatively mild intoxicant with few untoward effects. Yet there was no method available for measuring the tetrahydrocannabinol (THC) content, the active ingredient of the drug, before 1971 when it was synthesized. So research has only been of real value since that time."

What Is Showing Up Now?

But now the facts are accumulating. Sidney Katz, who specializes in medical and social topics, dealt with one of the definite dangers, in an article that appeared in the *Toronto Star*. As he put it: "An undisputed research finding is that a driver stoned on marijuana, is a dangerous driver. His perception of time and space, as well as his co-ordination, is impaired. . . . Well controlled studies of motorists in city traffic, intoxicated on marijuana alone, revealed that they missed traffic lights and stop signs, passed other cars recklessly, did poorly in manoeuvring their vehicles through traffic and were, at times, only

vaguely aware of pedestrians and parked cars."

It is also now known that the active ingredient in cannabis products (THC) is deposited in the fatty tissues of the brain. It remains there for a considerable time, one authority indicating "at least three days in active form," with some particles still being eliminated "for at least eight days." Others speak of some retention for from 8 to 18 days in the brain cells. Thus, the effect is there beyond the time of immediate use, causing fluctuating impairment of the senses for days. With repeated



use comes also the added danger of a gradual accumulation and the effect of the chemical on the entire system.

There is likewise evidence of the effect of THC on the reproductive organs, with accumulations of it in the ovaries and in the testes. Chromosomal damage in test subjects who had not used other drugs has been noted. This is sound reason for persons who are planning pregnancies not to use this drug at all. *Seventeen* magazine in March of 1979 adds: "We already know that THC can cross the placenta (the organ that unites the fetus to the uterus, through which an unborn infant is nour-



**'any
pregnant
woman who
uses pot is a fool'**

ished) when used by the mother, and any pregnant girl or woman who uses pot—or takes any drug at all—is a fool."

There is no disputing the serious effects of marijuana on the lungs and the respiratory system of humans. Tests have shown the tar content of cannabis smoke to be "50% higher than that of tobacco." That poses perils of lung cancer, chronic bronchitis and emphysema. Research done by the Institute of Experimental Cancer Research in Switzerland indicates a higher degree of damage done to the marijuana smoker than to the tobacco smoker. Autopsies have shown severe lung structure breakdown.

Researchers Change Mind

The increasing amount of information indicating undesirable effects has caused

some experts to change their minds in recent years. Dr. David H. Powelson, referred to earlier, now acknowledges that marijuana is not harmless and that he was wrong. Dr. Harold Kalant and Dr. Robert L. DuPont, both of whom were mentioned earlier, have also changed their views. You can see for yourself, in the box on page 9, what they are saying now.

The concern that they now express is valid. Dr. DuPont says: "While Americans were debating the question of criminal penalties for marijuana possession, the real tragedy has overtaken us almost unnoticed: the alarming levels of very high marijuana use among our young people." The evidence now is that there are more and more children in the lower grades in school using cannabis. It is "the drug of choice" for 12- and 13-year-olds in Canada. What will be the impact on the developing minds and bodies of adolescents using cannabis?

Dr. Robert Petersen of the National Institute on Drug Abuse in the United States, after mentioning great concern about younger marijuana users, said: "They are far more vulnerable, psychologically and physiologically, to the effects of any drug, and there is potentially a greater risk to them than to fully developed, integrated personalities." A study conducted at Bristol University, done on 10 consecutive cases of young marijuana users where behavioral changes had been noted, revealed that all suffered from cerebral atrophy. The degree of atrophy correlated with the duration of marijuana use.

Instead of learning how to cope successfully with the problems of life, they try to escape by resorting to drugs. But, as a director of marijuana studies at the University of California at Los Angeles said: "Youth is a time of learning how to deal with life, how to cope, how to deal with stress, how to manage anxiety. If you don't learn it then, when do you do it?"

change of mind on marijuana

Some of the experts most often quoted as saying that marijuana was harmless have changed their mind. Among them the following:

Dr. David H. Powelson:

"At the time, I had not had any direct experience as a physician with marijuana users. . . . Within five years, I knew I was wrong; I knew that marijuana was harmful."

Dr. Harold Kalant:

"I am rather more concerned about the use of cannabis today than I was when it first became a public issue back in '66 and '67. Then the available evidence seemed to suggest that it was innocuous. Now there is only one thing that I can say with any certainty and that's that there is no such thing as a safe drug."

Dr. Robert L. DuPont:

"The real issue is the health danger posed by this epidemic [of spreading marijuana use by the younger generation], danger of at least two kinds. One is the effects of the intoxication, ranging from the hazardous impact on driving to caring less about everything. The other area is purely physical. Here the concerns range from the regular occurrence of chronic bronchitis among marijuana users to the very real possibilities of harmful hormonal effects, effects on the immune system and possibly even cancer."

No More Harmful than Alcohol?

There are those who would say that such views are extreme and that one is unduly excited about the effects on what is perhaps the minority, not the majority of users, especially moderate users. They consider the use of marijuana on the weekend or at a party to be no more dangerous than the drinking of alcohol. 'Why,' they ask, 'should we be criticized for the use of marijuana when no stigma goes with the use of alcohol?' Indeed, they would claim that the arguments against marijuana would be equally valid against alcohol consumption. Is there little or no difference?

"Molecule for molecule, THC is 10,000 times stronger than alcohol in its ability to produce mild intoxication," says a doctor in *Executive Health* of October 1977. 'Well,' protest the drug advocates, 'mari-

juana users simply don't have to use a lot of the drug to get the same effect as does the heavy drinker. A little won't hurt.' But the same doctor adds: "It takes decades for irreversible brain changes to appear in the heavy drinker. In the marijuana smoker, irreversible brain changes may appear within three years."

Another point: THC is fat soluble and thus stays in fatty areas, accumulating with continued use, as we have seen. Alcohol, on the other hand, being water soluble and being metabolized in a relatively short period of time, is handled differently by the body. On this matter, a scientist at the Donner Laboratory of Medical Research explains: "Alcohol is water-soluble food and is metabolized to provide cell energy." [Italics ours] The end products, carbon dioxide and water, are easily

and quickly disposed of completely by the body. So it is good to observe the point of view of a psycho-pharmacologist who said: "Marijuana is a very potent drug,



'the biggest mistake is comparing marijuana to alcohol'

and the biggest mistake we make is comparing it to alcohol."

How Much Evidence Do You Need?

The mounting evidence that marijuana is dangerous cannot be brushed aside. A person might try to argue that he knows his own case best and sees no undesirable effects in his own life, so why should he be concerned about reports of harm to others. But, if the THC has adverse effects on the brain, can he trust his *own* estimation of its effect? A doctor gives this as a serious reason for believing that marijuana is the most dangerous drug now being dealt with: "Its early use is beguiling. The user is given the illusion of feeling good; he cannot sense the deterioration of his mental and physiological processes." But others notice.

In a *Toronto Star* article titled "You're Kidding Yourself If You Think Pot's Harmless," writer Joan Sutton quotes Dr. Norman Doorenbos as saying about evidence of this effect: "The most immediate is that it affects the thought process.

It is characteristic of marijuana smokers to begin a sentence, then not be able to end it because they forgot what they were talking about."

Does legalization of the use of cannabis in some areas mean that there really is nothing to fear? Ontario's Attorney General Roy McMurtry said that some obviously view the action as being like "a Good Housekeeping Seal of Approval." As a result, cannabis use has increased in these areas. But in view of the recent evidence on the subject, he said: "It must be made abundantly clear to the public that concern about the possibility of harm from marijuana is greater today, not lesser." Does that sound as if all is safe with marijuana?

Consider again the effects: Impairment of judgment of time and distance. Adverse effects on the memory, attention span, logical thinking. Damage to the immune system, the lungs and respiratory system. Danger of impairment of any children you may produce. Is that just the innocent use of a harmless relaxant that will make life easier?

Should there be those who would argue that the risks are worth it for the pleasures received, let them remember that all feelings of pleasure really occur in the brain. By a highly complex series of controls regulated by chemicals, the brain's many marvelous functions take place. Thus, what is thought to be pleasurable when caused by a drug is really nothing more than a chemically induced *disturbance* of the normal functions of the brain. Is it any wonder, then, that marijuana use ranked next to opiates, ahead of alcohol, as the reason for admission to government-funded clinics for treatment in some 40,000 cases in the United States in 1974?

Make no mistake: Marijuana is a drug. As such, it, like other drugs, poses a real threat to your health and life.

GOOD ADVICE ON LIVING

Inflation is a serious problem world wide. Prices continue to rise. Wages seldom match the price increases. This makes life difficult, and it is easy to allow the material cares of life to take all one's time and attention.

Yet, none of our possessions would be of any value if we did not have life. Where does life come from?

A product of chance? Certainly not. Even with human intelligence, none of us can design a small seed that will grow into a flower or a tree. Nor could we bring forth children without the marvelous faculties that were ours at birth. Extraordinary intelligence is evident in the design of these things. Whose? Not ours. It is God Almighty alone who has the power to give life, and his provisions also sustain it.—Acts 17:25, 28.

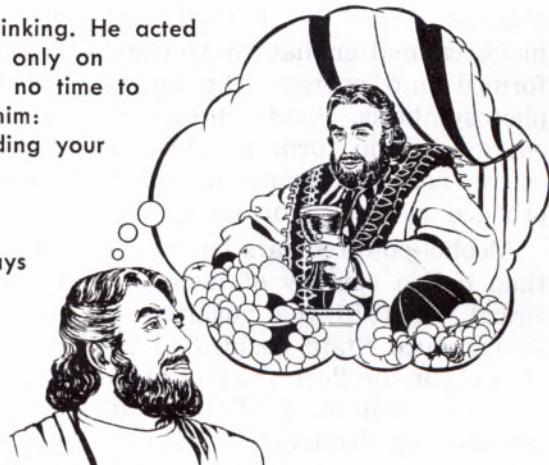


To help us appreciate that, Jesus Christ told a story about a rich man whose crops grew very well. He did not have room to store all the crops. What would he do? He said to himself: "I will tear down my storehouses and build bigger ones, and there I will gather all my grain and all my good things; and I will say to my soul: 'Soul, you have many good things laid up for many years; take your ease, eat, drink, enjoy yourself.' "

There was something wrong with that man's thinking. He acted as if his life and material prosperity depended only on himself. He gave no thought to God, set aside no time to learn and to do God's will. But God said to him: "Unreasonable one, this night they are demanding your soul from you. Who, then, is to have the things you stored up?"

Jesus added: "So it goes with the man that lays up treasure for himself but is not rich toward God."—Luke 12:16-21.

No material possessions can give life. No matter how much money a person acquires, death overtakes him. His life does not result from the things he possesses.



Whether we have few possessions or have an abundance, our personal future rests with God. So it is good to ask ourselves: What are we doing about getting to know the One who is the Source of life? Are we living in a way that he approves? A wise person will not be so preoccupied with the physical cares of life that he fails to become "rich toward God."

Alcohol For Fuel— The Answer?

a report on Brazil's answer
to the energy crisis

IN 1979, gas stations in a number of Brazilian cities began to sell alcohol, instead of only gasoline or diesel fuel. The idea is not new. Alexander Graham Bell declared in 1922: "World oil consumption is so great that supplies can only last for a few more generations. The solution is alcohol, a clean and perfect fuel."

To be a *real* solution, the alcohol must come from a renewable source. The only one available is biomass. What is that? Living, biological matter that can be transformed into energy. The key is photosynthesis. Plants store solar energy in the form of chemical compounds that man can use to produce alcohol—biomass alcohol.

Alcohol-powered cars have more than half a century of history in Brazil. In 1919 the governor of Pernambuco State decided to use alcohol for the fleet of government vehicles, and in the 1920's this state already used alcohol mixtures, with some cars running entirely on this fuel. By 1933, President Getulio Vargas decided to make Rio de Janeiro "the first alcohol-run city in Brazil." But the effort to convert the city's 20,000 cars to run

on a mixture of 60 percent alcohol had to be abandoned when the alcohol ran out. Other attempts to blend alcohol and gasoline were made in 1938 and 1942, but it was impossible to price alcohol competitively. However, in 1973 the picture began to change. Skyrocketing oil prices and increased consumption had driven the price tag on Brazil's oil imports from \$400 million (U.S.) in 1972 to \$4,000 million in 1975.

Since Brazil has an abundance of moving water that can be harnessed to generate electricity, the increased cost of oil did not create an energy crisis but, rather, a fuel crisis. The country's best option for fuel was biomass alcohol. Therefore, in November of 1975 the National Alcohol Program, *Proálcool*, was started. It covers everything—planting millions of hectares* of additional sugarcane, experimenting with other plants, also arranging for storage and marketing.

The first stage of the plan was to use up to 20 percent of alcohol mixed with gasoline, since this would not require any adjustments in car engines. After more than three years, up to 16 percent of alcohol is already being added. The Brazilian Alcohol Program has already gone far beyond dreaming. Alcohol production was 740 million L† in 1974-75; in 1977-78 it went up to 1,500 million. Plans call for the production of 10,700 million L of alcohol in 1985, which will represent about 5 percent of the energy consumed in the country.

* Each hectare equals 2.47 acres.

† One liter equals 1.06 U.S. liquid quarts.



Brazil has a total land area of 8.5 million km²* so there is enough land—and sunlight—for the cultivation of plants to produce the necessary raw material. Brazil's *cerrado*, its hinterland, of about 2 million km² is ideal.

The primary goal of *Proálcool* is to produce ethyl alcohol from sugarcane by fermentation and subsequent distillation. Present production is about 3,500 L of alcohol per year for each hectare, but experiments are under way to increase this production. The construction and installation of a plant to produce about 120,000 L of alcohol per day costs about the same as drilling a petroleum well (\$10 million, U.S.), but with the guarantee of production. Total installation of such an alcohol distillery takes about three years, whereas an oil field may require five years before it can be used commercially.

Recently the Institute of Technological Research even published a manual for building "mini-distilleries." Such a plant could fuel a truck and run stationary motors for electrical needs, while cane waste could be converted into fertilizer. Only 24 hectares of land would be needed to grow the sugarcane to supply the plant. For large land-owners in isolated regions the do-it-yourself distillery could mean a new way of life.

One of the chief concerns is the pollution created by the waste. The production of one L of alcohol yields also 12 L of *vinhoto*, the toxic cane pulp residue. If allowed to flow into waterways, this

absorbs oxygen and kills fish, algae and plants. Besides this, a distillery handling 120,000 L a day also produces four tons of yeast. Happily, Brazil has given attention to these problems. The *Metalúrgica Congonhas S. A.* manufactures equipment to transform the yeast into protein ration for animals by a thermo-process and the *vinhoto* into an excellent fertilizer or into animal food by evaporation, without affecting the output of the distillery.

A good quality, fertile soil is required for good production. Not all the soil here meets that qualification. Therefore the government intends to develop alongside the original *Proálcool* program a project for producing ethanol, and later methanol, from eucalyptus wood. The methanol could be used as a substitute for both fuel oil and diesel fuel. The main reason for using eucalyptus is that it does not need as fertile a soil as sugarcane does. Other advantages are that the eucalyptus trees mature very quickly in Brazil (five years) and can be cut throughout the year. Also, weather conditions have very little effect on the growth of eucalyptus but are of major concern for the sugarcane crop. Furthermore, the cost of producing the eucalyptus wood is about \$150 (U.S.) per hectare, compared with more than \$450 (U.S.) for sugarcane. This higher cost is due to the need of more fertile soil, more fertilizer, pesticides and labor. On the other hand, a plant designed to produce 120,000 L of alcohol a day from eucalyptus wood costs about twice as much as a sugarcane processing plant.

Right now the necessary raw

* One square kilometer equals 0.39 square miles.

material is available for a start. In the states of Mato Grosso do Sul and Minas Gerais alone there are more than 500,000 hectares of eucalyptus trees ready to be cut. It would be necessary to plant about 1,000,000 hectares of trees per year to supply the necessary raw material in the future. Recently President Figueiredo declared that "all we need is 10 percent of the *cerrado* in central Brazil planted with eucalyptus to produce the methanol equivalent to 2 million barrels of petroleum a day." This would make Brazil independent of oil imports.

There are also certain valuable residues. For each 1,000 L of alcohol there are produced 800 kg of metallurgic coke, 350 kg animal food (protein), 500 kg carbonic gas, and 30 kg of furfural, a raw material for resins and solvents. The value of the first two items alone is about 70 percent that of the alcohol produced. So it is said that the price of alcohol could vary between 10 and 20 cents per L, depending on the extent to which these byproducts can be utilized.

Changes in Automobiles

Any gasoline car can be converted to alcohol with just some minor adaptations, mainly for better performance. It costs about \$200 (U.S.) to \$250 (U.S.) per car. In their favor, alcohol cars accelerate faster than gasoline-powered cars. And since al-

cohol has a higher explosion temperature, it does not burst into flames readily if the car is wrecked. But fuel consumption increases 10 to 15 percent. Also, alcohol-converted engines have shown significant corrosion in carburetors, distribution pumps and fuel tanks. Therefore, more recently converted engines have plastic-lined parts and aluminum carburetors, to eliminate this problem. Another problem is poor starting in very cold weather. To offset this, methods to preheat alcohol for ignition have been developed.

In São Paulo, the orange-colored cars neatly marked "*Movido a Álcool*" (Alcohol Powered) have become a common sight. The standard joke when they pass is, "Well, at least the driver is!" Nevertheless, the alcohol program has long since passed the joking stage. It is a reality.

Automobile manufacturers already have alcohol-powered cars rolling off the assembly lines. The goal for 1980 is 250,000 automobiles with 100-percent alcohol engines. The government estimates that by 1982 more than 1,000,000 cars will have been adapted or will have factory-built engines using alcohol exclusively.

But is biomass alcohol the complete answer? It is, in fact, a valuable renewable source of energy that God has made available to man. However, conversion to alcohol for fuel is not going to solve all the problems. Misuse of this resource and greed in production and distribution can lead to serious problems just as it has with petroleum. The real problem will not be solved until selfish exploiters among mankind have been removed.

Do we have reason to believe that this ever will take place? Yes, but not by human efforts. However, the Bible shows that it is God's purpose to do this by means of his Messianic kingdom. "From oppression and from violence he will redeem their soul, and their blood will be precious in his eyes."—Ps. 72:14.

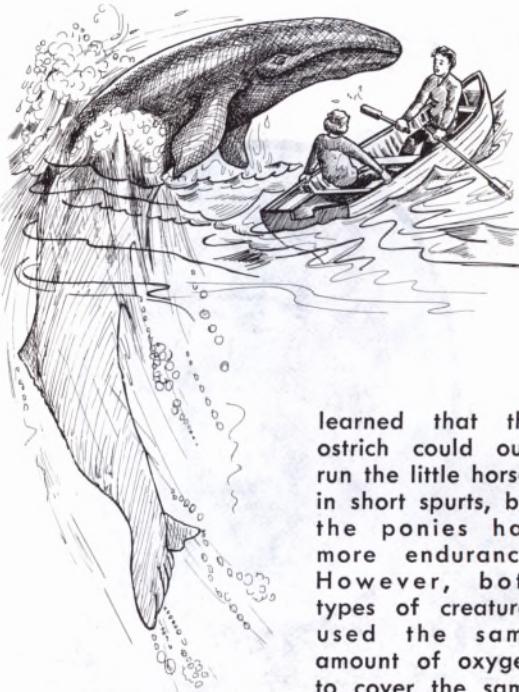
In Future Issues

- ***Youths, Do You Isolate Yourselves?***
- ***What's Happening to Your Time?***
- ***How It All Began***

Animals In The News

● A section of road in southern Illinois is closed twice a year while rattlesnakes, copperheads and water moccins, among others, slither across. In the spring and autumn, snakes have the right of way in the LaRue Pine Hills Ecological Area of Shawnee National Forest during their annual migration. "The snakes have to travel 500 feet [155 m] from their winter home in the craggy bluffs to one of several swamps which have been created by the backwaters of the Mississippi and Big Muddy Rivers," explained U.S. Forest Service Ranger Jay Wittak. "Several years ago we decided it would be easier to restrict traffic in the area than it would be to merely caution motorists," Wittak added.

● Some scientists have wondered if the two-legged ostrich is more efficient or less so as a runner than four-legged creatures of similar size. To find out, two Harvard University researchers measured oxygen consumption of an ostrich and two Shetland ponies. They

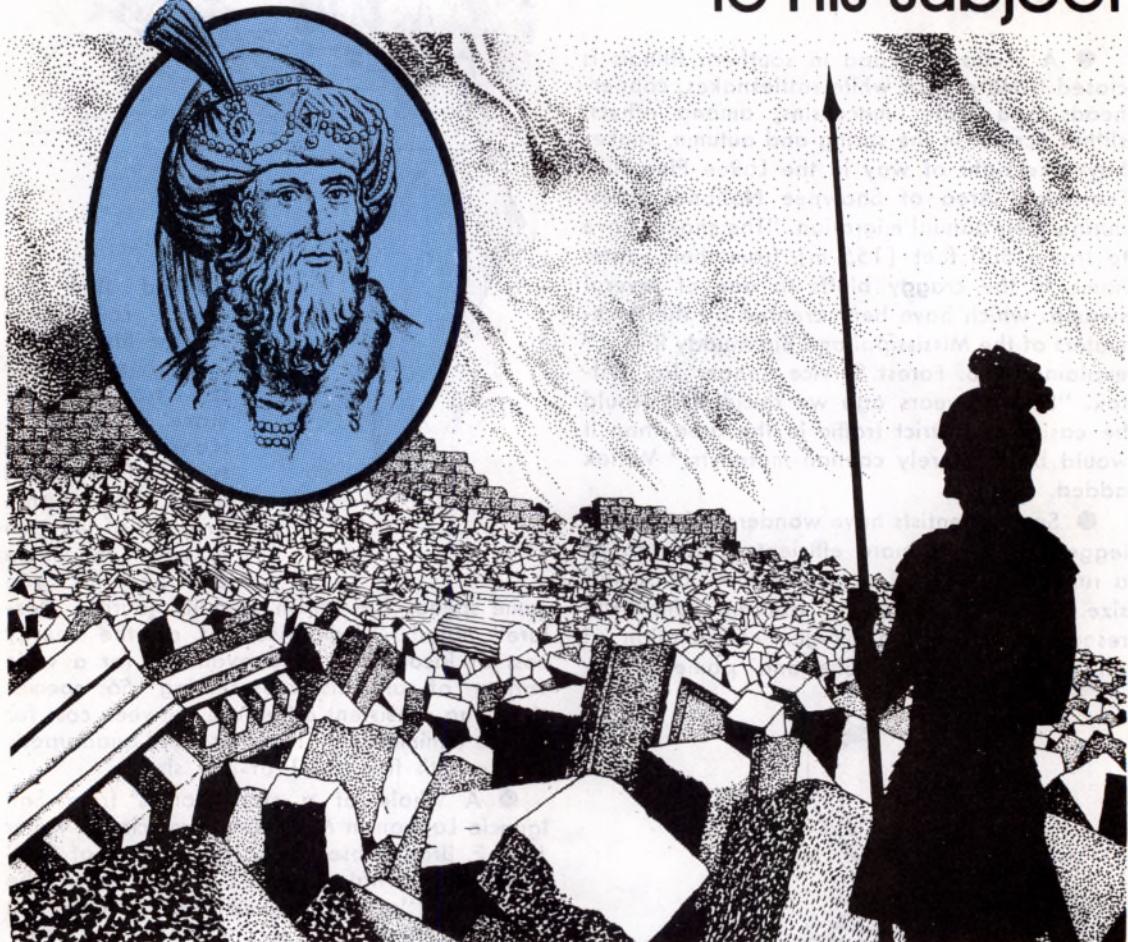


learned that the ostrich could outrun the little horses in short spurts, but the ponies had more endurance. However, both types of creatures used the same amount of oxygen to cover the same distance at the

same speed. The British scientific journal "Nature" noted: "Comparison of all the energy cost of locomotion data available for a wide variety of animals representing 66 species shows no consistent difference between cost for bipeds [animals with two feet] and quadrupeds [those with four feet] of any size."

● A whale of a story comes from San Ignacio Lagoon in Mexico, where science writer Jane E. Brody observed a large group of California gray whales in their winter home. She tells of one "as long as a city bus and weighing about 35 tons, and her two-ton calf [that] were bearing down hard on our 16-foot [5-m] skiff." Then, "just when a collision seemed inevitable, the mother whale submerged and eased herself under the idling boat, lifting it partly out of the water with her blows and pushing it about with her heavily barnacled back," relates Brody. "The calf swam alongside and presented its dimpled head to be stroked by the two-legged mammals it dwarfed." She continues: "For half an hour, mother and calf cavorted around the boat, soaking us with their sprays from their two blowholes, taking turns having their rubbery skin stroked and standing on their tails and rolling on their sides to get a good look at us." It seems that it is almost always mothers with calves that are so friendly.

Josephus — historian well-suited to his subject



THE Middle East is a focal point of international interest today, as it was 2,000 years ago. Then, as now, it was the home of a Jewish state surrounded by hostile neighbors in which religious feelings mixed with nationalistic aspirations ran high. Then, as now, the Middle East played a vital role in the world economy. (Egyptian grain was used to feed the population of ancient Rome.) Then, too, this politically sensitive area was a gateway between the Roman Empire and her rivals.

In the midst of these circumstances, prophecies were uttered regarding that Jewish nation. These prophecies were to be fulfilled in remarkable detail. It was foretold, for example, that the city of Jerusalem would be surrounded—first by encamped armies and then by a fortification of pointed stakes—and that the city would fall to its enemies after a bitter struggle, marked by famine, pestilence, and great cruelty. It was predicted that the much-admired temple at Jerusalem,

recently enlarged and beautified, would be utterly demolished.

Why Should We Be Interested?

The precise fulfillment of these prophecies 37 years after they were given makes them of keen interest to observers of the world political scene today. This is especially true because Bible students see that there will be a like but major fulfillment of Jesus' prophecies that is to affect the inhabitants of all the earth today.—Luke 19:43, 44; 21:5-35.

But all of this happened over 1,900 years ago. How do we know that Jesus' prophecies regarding Jerusalem were fulfilled in minute detail? Our knowledge of events surrounding the destruction of Jerusalem by Roman armies in the year 70 C.E. is dependent to a considerable extent on the writings of the Jewish historian Flavius Josephus. In his book *The Wars of the Jews* he reports on events foretold by Jesus, although there is no evidence that Josephus was himself a Christian, or even that he was familiar with Jesus' prophecies.

Josephus tells us, for example, that the Roman general Titus built a fortification of pointed stakes to hasten the arrival of famine conditions in besieged Jerusalem, just as Jesus had predicted. (Jesus said: "Your enemies will build around you a fortification with pointed stakes and will encircle you and distress you from every side.") Josephus speaks at length of the terrible straits to which the inhabitants of the city were reduced by the famine, pestilence, and the bloodshed they endured, all of which Jesus had spoken of. ("There will be . . . pestilences and food shortages." "They will fall by the edge of the sword.") He tells us of the razing of the temple to its foundations, without a stone left upon a stone, precisely as Jesus predicted. ("Not a stone upon a stone will be left here and not thrown down.")

Who Was Flavius Josephus?

Just who was this Jewish historian who has come down to us with the Roman family name "Flavius"? Was he really in a position to give us accurate information on events in first-century Judea? Can we trust what he says?

First, it should be noted that Josephus was not writing dead history from the vantage point of some imperial library; he was writing of the events of his day. Indeed, he was an eyewitness of most of the events he chronicled. His account is the more fascinating because he served actively during the Jewish-Roman war on both sides, beginning as a general of the Jewish forces in Galilee, and ending as an adviser to General Titus. So close did his friendship with Titus and his father Vespasian become that Josephus later adopted their family name, Flavius, which is why he is known to us as Flavius Josephus, and not by his Jewish name, Joseph ben Matthias.

Born a few years after Jesus' death, Josephus became a keen observer of political trends. He was of noble birth, a member of the religious sect of the Pharisees and had family connections with the more aristocratic sect of the Sadducees. He tells us that at the age of 26 he was sent to Rome as part of a group to secure the release of certain Jewish priests, who had been sent in bonds to Caesar by the Roman procurator Felix on "small and trifling" charges. This instance recalls to readers of the Bible the difficulty that the apostle Paul had with this same Felix, who kept him imprisoned for two years, hoping for a bribe. (Acts 24:27) While in Rome, young Josephus formed a friendship with none other than the wife of Emperor Nero, the Empress Poppea, who intervened to free his friends.

When Josephus returned to Jerusalem, full of admiration for Roman culture and military power, he was aghast to find the

Jewish nation more and more bent on war with the Romans. Apparently hoping to be in a position to negotiate with the Romans, Josephus accepted an assignment from the Jewish moderates in Jerusalem to go to Galilee as a sort of military governor-general. While there he busied himself fortifying the cities of Galilee, organizing the local troops on the Roman model, and fighting off all sorts of plots laid against him by local Zealots.

A Bold and Cunning Character

The personality of Josephus is a study in cunning. This can be seen by the way he handled matters when the city of Tiberias on the Sea of Galilee revolted against his authority and expelled him. Lacking the forces to march against the city, Josephus had his supporters each take a ship and sail it across to Tiberias. Josephus barely had enough men to sail the 230 ships he commandeered, but the people of Tiberias did not know that, and thought the ships were full of soldiers. Bluffing all the way, he frightened the people into surrender with no loss of life.

Soon the Roman general Vespasian invaded Galilee with 60,000 men to avenge the humiliation of Cestius Gallus back in 66 C.E. Vespasian finally cornered Josephus in the little mountain town of Jotapata, which fell after a fierce siege of 47 days. Josephus and 40 other survivors hid in a cave. When the hiding place was discovered, the Romans sent word that Josephus' life would be spared if he would surrender.

This was tempting to Josephus, but greatly displeased his men, who had made up their minds to conclude a suicide pact. Pretending to go along with the idea, Josephus proposed that lots be chosen to determine the order in which the men would kill one another. Some suspect that Josephus "loaded the dice," because at the end

only he and one other survivor remained, at which point Josephus persuaded the fellow to surrender to the Romans with him.

After being taken captive, Josephus boldly flattered the superstitious Vespasian by claiming to be a prophet, and prophesying that Vespasian was to be ruler of the world. Vespasian was sufficiently impressed to change his plans to send Josephus to Nero. Instead, he kept his prisoner guarded to see what would happen. In 69 C.E. when Vespasian was acclaimed emperor, he remembered Josephus' prophecy of two years previous and Josephus from that time on became an intimate friend and adviser to the Flavian family.

When Vespasian went to Rome to take over the empire, Josephus went with Titus, Vespasian's son, to finish the war against the Jews by taking Jerusalem. He served Titus as an adviser on Jewish tactics, and as a tool of Roman propaganda, risked his life before the walls of Jerusalem as he called on his people to surrender.

Eyewitness

It was during this period that Josephus was able to see with his own eyes the events that proved the truth of Jesus' notable prophecy against Jerusalem. Jesus had foretold "great necessity upon the land and wrath on this people," and Josephus made note of the wrath of the Romans, who had originally been inclined to be lenient with the Jews, but had been infuriated by the unwillingness of the Jews to yield.—Luke 21:23.

When the city fell after a relatively short siege of four and a half months, the Roman soldiers killed until they were too tired to kill any more. "They slew those whom they overtook without mercy, and set fire to the houses whither the Jews had fled, and burnt every soul in them, and

laid waste a great many of the rest; and when they were come to the houses to plunder them, they found in them entire families of dead men, and the upper rooms full of dead corpses, that is, of such as died by the famine . . . they ran everyone through whom they met with, and obstructed the very lanes with their dead bodies, and made the whole city run down with blood."

It is of interest to note that not only the ferocity, but the very brevity of the siege of Jerusalem had been predicted by Jesus when he said: "In fact, unless those days were cut short, no flesh would be saved." (Matt. 24:22) During the siege, Josephus watched in numbing horror as the Jews pitched 600,000 bodies over the walls of the city, victims of the famine, disease and factional warfare in the city. At that rate, everyone in Jerusalem would have died in another five months!

Josephus tells us that the total of Jewish dead in the siege reached 1,100,000, and defends this figure by pointing out that the siege occurred when great multitudes of pilgrims were in Jerusalem for the Passover festival. Josephus' figure has been doubted since the Roman historian Tacitus gives a lower figure—600,000.

However, it should be remembered that Tacitus was not an eyewitness. His writings are full of inaccuracies regarding Jewish history and customs, and he admits that his casualty statistics were received secondhand.

Josephus further defends his figure of 1,100,000 by pointing out that not long before the Roman invasion of Judea a count had been taken of the number of animals sacrificed during the Passover and it was found that 256,500 had been killed. Since an average of 10 persons would eat the Passover meal from the same animal, Josephus concluded that as many as 2,500,000 persons could be found in Jerusalem for the Passover.

Credible, Not Infallible

Josephus' credentials as an eyewitness historian are impressive. Of course, he was not an eyewitness to events inside the city of Jerusalem during its siege, but he was able to procure the freedom of some 200 Jewish survivors after the fall of the city and he could have interviewed them. During the siege there was also a steady stream of Jewish deserters, and Josephus was free to interview these as well. Additionally, he apparently had access to the diaries and commentaries of his patrons Vespasian and Titus, since he refers to these documents in his later writings.

This is not to say that Josephus' history is infallible. His point of view is clearly affected by his desire to please his Roman benefactors, as well as by his dislike of the Zealots who took control of Jerusalem during the siege, some of whom had been his enemies when he was military governor of Galilee. But there is no reason to doubt the overall accuracy of Josephus' work. After all, it was written during the lifetime of all those involved in the events being chronicled. Any serious inaccuracies would have been pounced upon by the author's many jealous detractors.

Josephus' writings make fascinating reading for students of history and students of the Bible alike. Perhaps you were not aware that secular history so strikingly confirms Bible prophecy. Although the Bible does not depend on Josephus, or any secular historian, for verification of what it says, nevertheless an appreciation of how the Bible has proved true in the past might well encourage objective persons to consider closely what it says for our day.

Had you previously thought of Josephus as a quiet scholar in a musty library? In short order he was a diplomat, general, prisoner of war, self-proclaimed prophet, Roman military adviser, and vivid chronicler of current events—truly a historian uniquely suited to his subject!



I worshiped my ancestors

MY EARLIEST memories as a child revolve around morning rituals of ancestor worship in Okinawa. My mother had given me to my aunt when I was four years old and we lived with my grandmother, an ancestor worshiper. She believed that the spirit of the deceased lives on and that surviving relatives have an obligation to honor their ancestors. This is done by putting flowers and food on their graves, and through daily prayers to them in the home.

Each day before sunrise and prior to breakfast, I cleaned the family altar, took away the wilted flowers and replaced them with fresh ones. Grandmother would kneel before the altar and, looking straight ahead with her eyes open, she would pray at length to our ancestors. But, since the prayers were in a low tone, I could not understand what she was saying.

Grandmother taught me that there are no gods except our deceased ancestors and that they are superior to living humans. In accord with this belief, much care is given to a person's remains after death.

The corpse is placed temporarily in a grave until the flesh has decomposed. Then the bones are removed, cleaned, and put in a special container, with the name of the person, date of birth and date of death written on the outside, and transferred to a family *haka*, or grave. The *haka* is a womb-shaped place made of concrete or other material to keep all the containers holding the bones of deceased ancestors or relatives. The foundation of the belief is, of course, the teaching that humans possess immortality, and thus live on after their physical death.

Remembrance of the Dead

Once a year our family gathered together in remembrance of our dead ancestors. On such occasions, a special menu of mochi rice, tofu (bean curd) and seaweed was served. These are considered delicacies among the Okinawan people, and making this provision was expensive.

On special occasions my family would hire a priestess, usually an older woman, to lead in our ceremony honoring the dead. We were all required to kneel while she led us in prayer for about 30 minutes. We could not understand the words, which were uttered in a soft mumble, and to us kneeling children the prayers seemed as if they took an hour or more.

At the age of 11, I returned to Hawaii to join my parents. Here I came in contact with many religions of Christendom. After marriage, I was baptized in the Baptist faith. But my husband was an ancestor worshiper and we had our own family altar. Each day I would put flowers on the altar, burn incense before it, and pray to my ancestors just as my grandmother had done. This did not seem strange to me, since the Baptist group also believe that humans possess a soul that lives on in a spirit world after death.

Our ancestors were shown honor, I thought, by praying to them and reporting various matters of life to them. I believed that they could either help me or bring me harm. Therefore it was my earnest desire not to displease them, even in trivial matters. For example, once I wanted to give my teacher a gift, but first, out of respect for my ancestors, I put it on the altar.

Set Free from Fear of Death

During World War II, Jehovah's Witnesses came to my door. From their magazines, I learned how Hitler in Nazi Germany had interned the Witnesses in concentration camps and put some to death because they refused to participate in war. This interested me, and revealed a contrast between Jehovah's Witnesses and religions of Christendom. Before long I began to study the Bible with the Witnesses.

The things that they showed me in God's Word had a profound effect on me. I have never forgotten what is written at Ecclesiastes 9:5: "As for the dead, they are conscious of nothing at all." Another Bible text that greatly interested me was Ezekiel 18:4, which states: "Look! All the souls —to me they belong. . . . The soul that is sinning—it itself will die."

These and numerous other Bible texts helped me to see that the human soul is

not immortal, that the dead are not alive in a spirit world but are unconscious, unable to help or to harm. What relief this brought me! No longer was I afraid of the possibility of being tortured eternally after death. I was freed from my previous belief in reincarnation. I now realized how futile the worship of my ancestors had been, since they were dead and unable to help or to harm me.

As I progressed in my study of the Bible, I also learned of the comforting hope of the resurrection of the dead. "The hour is coming in which all those in the memorial tombs will hear [Jesus'] voice and come out." (John 5:28, 29) Billions of persons who are now dead will have before them the prospect of eternal life on an earth restored to paradise conditions. Then, I realized, God's will truly 'will be done on earth as it is in heaven.' (Matt. 6:10) It was these Bible truths concerning the dead that set me free. My outlook on life changed.

I immediately had a burning desire to share these newly learned truths with my friends. My first efforts were directed toward my *living* relatives since I no longer worshiped the dead. First, I contacted my mother and explained to her the true condition of the dead. In time she appreciatively accepted the Bible's teaching. My father was also contacted, and I began to study the Bible with him. Before he died, he too accepted the fact that the dead "are conscious of nothing at all" and so abandoned ancestor worship.

At every opportunity I shared these grand Bible truths with my friends, relatives and neighbors. These truths brought great comfort and joy to me, and I wanted others to know the Bible promise that here on earth under God's kingdom "he will wipe out every tear from their eyes, and death will be no more, neither will mourning nor outcry nor pain be anymore."—Rev. 21:4.

Personality Change

As I look back to the time when I worshiped my ancestors, I realize that my entire life had been centered around worship of the dead. To a great degree, little concern had been shown about expressing practical love for my family and relatives while they were alive. Becoming a follower of Jesus Christ has helped me to put on a new personality, to be more loving to my living relatives and to others.

For instance, when I first learned that my parents had given me away to my aunt at the age of four, I resented it and began to hate my mother. But after becoming one of Jehovah's Witnesses, I realized that I could no longer harbor hatred for my mother. As Jesus taught, we must forgive others if we want God to forgive us. Jehovah himself sets the example by freely forgiving us. (Matt. 6:12; Col. 3:13) Therefore, I went to my mother and explained that I no longer hated her in my heart but wanted to extend forgiveness to her. She apologized and we established a peaceful mother-daughter relationship that lasted until she died.

In dealing with others, too, I was able to

express more love. When they mistreated me in some way, rather than harbor hatred and animosity, I was able to extend true forgiveness. These newly acquired qualities of mercy and forgiveness even helped to save my marriage. When first studying the Bible, I was contemplating a divorce. But the Bible helped me to learn to forgive my husband's imperfections, and we remained married for 33 years, until his death.

Rewards in Aiding the Living

When I observe the loneliness of aging parents and grandparents today, and how often they are neglected in their twilight years, I am very thankful that I learned to show real love and respect for my parents while they were still alive. The happiness that this brought me confirms what Jesus stated, namely, "There is more happiness in giving than there is in receiving."—Acts 20:35.

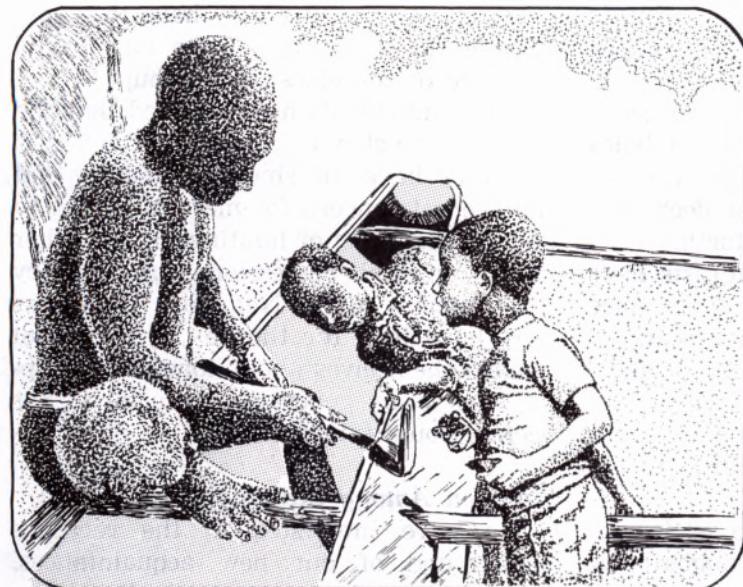
Today, at the age of 65, I no longer worship my deceased ancestors but am deeply grateful to be engaged in the worship of Jehovah, the true and living God. (Jer. 10:10)—Contributed.

"THEY PRACTICE WHAT THEY PREACH"

SINCE World War II Jehovah's Witnesses in Italy have grown from a few hundred individuals to over 81,000 active preachers. This growth, as well as the spiritual quality of the Italian Witnesses, has not escaped the attention of the press in Italy.

Well-known Jesuit Virginio Rotondi wrote in "Il Tempo" of October 8, 1978: "[Jehovah's Witnesses] know what they are talking about. . . . they quote a particular verse in a particular chapter from the letters of St. Paul, St. Peter, or St. John. . . . Furthermore, the new 'converts' soon start putting into practice and 'preaching' what they have learned wherever they may be. I must paradoxically admit that those Christians are experiencing an undeniable phenomenon of growth."

Then on August 12, 1979, "La Stampa" pointed out that Jehovah's Witnesses in Italy are "the only religious community having such a surprising growth rate. However, they practice what they preach . . . Their preaching is not just words but a way of life . . . they are the most loyal citizens anyone could wish for: they do not dodge taxes or seek to evade inconvenient laws for their own profit. The moral ideals of love for neighbor, refusal of power, non-violence and personal honesty (which for most Christians are 'Sunday rules' only good for being preached from the pulpit) enter into their 'daily' way of life."



Meet the Negritos

By "Awake!"
correspondent
in the Philippines

THAT is just what a group of us did recently. We met the Negritos, who live in the mountains behind the huge American military base at Angeles, north of Manila.

Who are they? A friendly people, found in the Philippines mainly around the island of Luzon. A pygmy race, their average height is under five feet (1.5 m), and their skin color is dark. Their features are negroid; hence, the name "Negrito" ("little Negro").

Nobody knows where the Negritos came from or when they arrived in the Philippines. Today there are about 25,000 of them. Some live a very simple life in the forests and mountains, while others are being gradually assimilated into the life patterns of their lowland neighbors.

Their Way of Life

The group we visited has settled down to a more or less permanent way of life. They live in small huts made of grass and bamboo and anything they have been able to salvage from their neighbors. Interestingly, we saw huts with no more than three feet by four feet (0.9 x 1.2 m) of floor space! The clothing is Western in style.

In other parts of the country, Negritos live less complicated lives. Described as "extremely mobile," they dwell in family groups numbering perhaps between 10 and 50, and constantly move around the mountains and forests in search of game, wild fruit and vegetables. At night, they erect a lean-to in which to sleep, but they will

never stay in one place for more than a few days or weeks. Their clothing is simple: a loin cloth for the men and a short, wrap-around skirt for the women, both often made of bark.

Living in the forest, the Negritos' natural senses are well-developed. John Garvan, an Irish-born scholar who lived with them for several years, reported that they could perceive the scent of fruit from quite a distance. They even claimed to be able to tell when a person was getting sick by his changing body odor, and said that they could smell what kind of meat an individual had been eating! Their hearing, too, is acute. Also, the Negritos have a well-developed sense of direction, and seem to know instinctively when game is around.

Great skill with the bow and arrow is characteristic of the Negritos. A museum authority remarked that they must have the most highly developed arrow system in the world. The Ayta tribe of Zambales has something like 50 different types of arrows—one for wild pig and deer, one for bats, one for fish, and so forth.

Negritos still living in the forests have unusual ideas about personal appearance and adornment. Some will make scars all over their bodies "for beauty's sake." Others wear bangles on the arms and ankles, while still others stain their teeth black and chip them to a point, "to enhance their looks."

When we entered a Negrito settlement near the Filipino village of Sapangbato, we received a very friendly welcome. Small black faces grinned at us from the huts as we made our way to the village captain. He and the Methodist pastor—himself a Negrito—were very happy to spend time discussing the important message that we had brought from the Bible.

A Friendly People

We, like others, were impressed by the friendliness of these small people. True, the early chronicles speak of them as a warlike race. There are stories of different tribes fighting among themselves for territory, and of the victors drinking out of the skulls of their vanquished enemies! Other accounts tell of the early days when the Negritos of Laguna ran a kind of "protection racket." Reportedly, these Negritos would appear at a certain time and demand tribute from the lowland Tagalogs. If it was not forthcoming, they would carry off a number of heads.

Modern researchers, however, insist that the disposition of the Negrito is quite gentle. It is said that these people never lie to one another. Also, there is real affection between marriage mates. They love their children and show respect for the aged.

And the closest thing they have to a government in the forest is the advice and guidance of the eldest in a group.

Some individuals have claimed that the Negritos are slow learners. But the fact is that they have the sharpest memory and the keenest concern for matters having to do with the forest or hunting. On the other hand, material possessions are of very little interest to the Negritos. As long as they have food for the day, they do not trouble themselves about tomorrow. Happily, for many generations the forest has been a bountiful provider.

Religion Among the Negritos

We were interested in the religious background of our new acquaintances. They told us they were Methodists. Previously, however, they had been Catholics. Some remembered a day when they did not belong to any sect of Christendom. Negrito worship at that time was a little vague in their memories, but they did recall that they would do a ritual dance if someone got sick. If the harvest was exceptionally good, they would slaughter a pig, cut off its head, and dance around it, shouting "Grunt, pig! Grunt, pig!" Then, they claimed, the dead pig's head would grunt! Well, did they worship the dead pig's head? No. They did not think so, because afterward they would eat it!

The Negritos still dwelling in the forest have vague religious beliefs that vary from settlement to settlement. Some of these Negritos appear to believe in a supreme God, and they have myths to explain natural things that they do not understand. For example, some of them told John Garvan that the sun is a man, the moon is his wife and the stars are their children. The moon, however, fears that the warmth of the sun will harm her small children; so she and the stars are constantly running away from the advances of her shiny husband. Garvan tried to ex-

plain that the sun and the moon are not people. "What are they then?" he was asked. "Celestial spheres," he answered. At this seemingly absurd idea, the whole group burst out laughing.

We were very happy to discuss with these people what the Bible says about the "Supreme Spirit" and what he has promised for mankind. One thing that impressed them was that God has a name, Jehovah. (Ps. 83:18) Those who recently had lost loved ones in death were comforted to know that Jehovah God will bring the dead back to life. (John 5:28,

29) We were happy to tell them about God's promised new order, in which sickness and death will be no more and there will always be enough food for each day. —Isa. 25:6, 8; 2 Pet. 3:13; Rev. 21:4.

Like so many other tribal minorities, the Negritos and their way of life are disappearing under the pressure of modern civilization. The territory of those still wandering in the forests is dwindling. But we very much enjoyed talking to this friendly and relaxed tribe of small people. Having met the Negritos, we anticipate visiting them again.

Is Handcrafting For You?

by "Awake!" correspondent
in Australia



"WHEN I lived in Latvia many years ago, I had a friend who could shear a sheep, spin the wool, weave it into cloth and use it to make her own clothes." As Madge spoke, her face glowed with appreciation for the resourcefulness and ingenuity of her friend.

In the past, handcrafts of many kinds were a way of life for most people. Many things that were used or worn had to be produced by hand as a matter of necessity. But that is not true today.

Why, then, do we see such a resurgence of interest in handcrafts? The sameness of mass-produced articles causes some people to prize handmade items that bear the marks of a craftsman's skill. Others are looking back to what they

feel are the "good old days" and trying to recapture the spirit of quieter, more settled, times. Many persons find in handcrafting an activity that gives much personal satisfaction—something one does not often achieve in an industrialized society.

The Role of Handcrafts in Education

Some education authorities take the teaching of handcrafts very seriously. Why? They see such classes as an opportunity to help

a student, not merely to learn how to make certain objects, but to develop as a person. The final product of a handcraft lesson is viewed as secondary to the development of initiative, resourcefulness, flexibility, adaptability and creativity, as well as tolerance, understanding and cooperation in group activities.

The therapeutic value of handcrafts is also recognized by those helping the mentally ill. Such work gives a sense of accomplishment and can help a person relate to other people in the sense of sharing with and assisting them. This provides a feeling of being needed.

Is It for Me?

Does handcrafting interest you? If so, what kind? To decide whether handcrafting could be a worthwhile pursuit, you must evaluate your own situation. The time element must be considered. Would it be a distraction from more important things?

On the positive side, the benefits are many. Handcrafting can bring a sense of accomplishment and a feeling of being productive in the use of one's hands. Many need such an outlet, since their everyday work may be routine, not giving opportunity to express creative ability. Handcrafting can be of value also in providing items that are both practical and decorative for family and friends. A handcrafted gift tailored to the personality or needs of the receiver can reflect much love and concern on the part of the giver. Since it is a form of recreation, handcrafting can also serve for refreshment of body and mind, which is needed by all. Many prefer using some time in constructive crafts instead of sitting passively in front of a television set.

In determining what kind of handcraft would be suitable for you, give attention

to your personal circumstances. For example, if you live in a small flat, it would be foolish to choose tanning skins and hides as your craft. This requires large drums and tubs, as well as copious amounts of running water. If you select something that makes a mess, give consideration to the person who does the housekeeping.

It is ideal, of course, for a whole family to be involved together. Apart from benefits to children, engaging in activities of this kind strengthens bonds between individual family members.

The economics of handcrafting also must be analyzed. By using items around the home, there are many kinds of handcrafts that can be pursued without much expense. Patchwork is in this category. Where specialized equipment is required, several interested friends might choose to get together and share such things as looms, spinning wheels, pottery wheels, and so forth. Some crafts, such as macrame, require no more tools than one's own fingers. As for instruction books, most libraries have a good selection about handcrafts.

Some Popular Crafts

Here are a few details about some popular crafts that you may find interesting:

POTTERY is an age-old favorite. Much can be done at home even without a wheel by methods such as pinching, the use of coils for shaping the product, the use of flat slabs, or even casting in a mold made from plaster. Of as much interest as the making of pottery is the glazing of it. In fact, many prefer glazing to pottery making itself. Glazes are composed of powdered chemicals and minerals colored by metallic oxides. A seemingly endless variety of finishes can be achieved.

BATIK is a method of dyeing cloth by using wax to resist the dye and produce a pattern. This affords much latitude for

experimentation, and enjoyment often comes from surprise at the end result. TYE-DYEING is batik's cousin. The variation in dye pattern is achieved, as the name suggests, by tying the cloth in various ways.

MACRAME is a fascinating craft. With it a wide variety of useful and decorative articles can be made from any type of string or twine by using just two basic knots. They can be mastered in a couple of hours, and from then on you are limited only by your imagination. Macrame can be "dressed up" very inexpensively by adding "beads" made from pieces of potato, carrot, and so forth, cut into basic shapes and dried very slowly in a warm oven. When completely dried, they can be painted.

SPINNING has regained much popularity during recent years. A spinning wheel ready to assemble can be purchased inexpensively. Handcraft stores make fleece available. Country graziers and shearing demonstrations at schools are other sources of fleece. If one is not interested in doing one's own dyeing, a variety of colored fleeces can be obtained. However, dyeing in itself is another interesting project, and much information is available on using natural vegetable dyes, onion skins, walnut shells, and so forth. Spinning, of course, is not limited to fleeces, but can include many fibers. One individual spun some yarn even from the hair of a Pekingese dog at the request of the dog's owner!

Indeed, there are handcrafts for all ages, tastes and abilities. Further examples are jewelry-making, leatherwork, weaving, lacemaking, etching, making bark pictures, making designs with nails and threads, tatting, needlework, knitting, crocheting, carving, tole painting (folk art), stained-glass work, basket weaving and netmaking.

A Word of Caution

With a handcraft that captures the imagination and fulfills an individual's need for creativity, it is easy to go overboard and "let the tail wag the dog." One can become so absorbed that more important things are neglected. Also, if a person's schedule is already overcrowded, adding a handcraft would only impose a burden and the whole purpose would be lost.

It is a good idea, too, to be sure of oneself before investing money in an expensive range of equipment and supplies. Many kits are available that enable people to try out a handcraft before stocking up on items that may never be used if the craft is not pursued. Speaking with others who already pursue a craft may be helpful. They may let you try your hand with their equipment and supplies. Doing so will help you to avoid the frustration of making unnecessary mistakes.

Is handcrafting for you? That is for you to decide. Keep in mind, though, that developing such a skill can heighten your own pleasure in life and also benefit others.



"God is my copilot"—is he yours?



THEY were on a long-planned visit to the United States and were unaccustomed to seeing what Americans see so often—bumper signs. During their trip they discovered that some of the signs were serious in nature, some were simply clever advertisements, others touched on subjects better to be ignored, and some were just for fun!

Being Christians and much interested in religion, they were particularly fascinated by the signs that conveyed religious messages. For example, one proudly proclaimed: "God is my copilot."

Very possibly the car driver simply meant—if he seriously meant anything at all—that his relationship to God was a very close one, like that of a plane's pilot and copilot. Up to this point, well and good.

A copilot, as you know, serves as an assistant or relief pilot in an aircraft, authorized, for example, to take over the controls when instructed by the aircraft's captain to do so, or in the case of an emergency. The copilot serves as second in command, next to the pilot or captain himself. It was in this respect that the comparison seemed inappropriate, because who would presume to claim that, in the relationship between God and man, God is only "second in command"?

Persons who make major decisions in life, not on the basis of God-given principles, but, rather, solely on the basis of personal preference or expediency are in reality relegating God to second place. Perhaps in misguided sincerity they are making him their "copilot," confident of his help if the decisions they have made go wrong, feeling that in emergencies they can call upon him to take over the controls, so to speak, and rescue them from a possible crash landing.

Many persons relegate God to a "copilot" position by charting a religious course through life without giving due consideration to divine directions as set forth in the Bible. They choose a religion on the basis of its

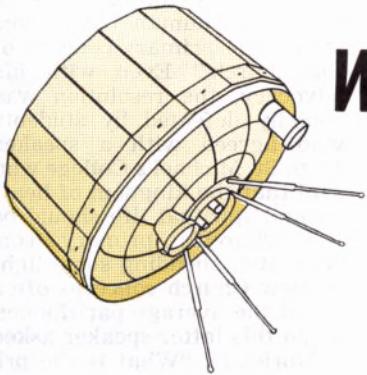
financial or social appeal, its convenience or its traditions, not upon the basis of its adherence to divine principles and laws. So should they expect God to feel obligated to intervene in times of emergency and serve as their "copilot"?

Dwight D. Eisenhower once said that in times of need soldiers on the battlefield would "instinctively turn to God" for help; he claimed that "there are no atheists in the foxholes." But why do many wait for such an emergency before thinking seriously about God? True faith is based on accurate knowledge, with works to back it up. A "God is my copilot" attitude is not the sign of genuine faith. An English writer, critic and artist of the 19th century, John Ruskin, summed it up nicely when he said: "He who offers God a second place offers him no place."

To apply the expression "second in command" to Almighty God is to distort the facts. Repeatedly, 50 times in fact, he is referred to in the Holy Scriptures as the "Most High." Success and happiness in life depend upon a humble recognition of man's relatively low position in contrast to Jehovah's position of supremacy.

The example of Abijah, king of the ancient two-tribe kingdom of Judah, bears this out. When faced by the military forces of Israel's King Jeroboam, and outnumbered two to one, he told his opponents: "Look! with us there is at the head the true God . . . do not fight against Jehovah the God of your forefathers, for you will not prove successful." (2 Chron. 13:12) It was because Abijah recognized that Jehovah was "at the head," serving as their heavenly "captain," that the Jews under Abijah, as his earthly representative, were successful in achieving a victory despite overwhelming odds.

By humbly recognizing our subordinate position, our relationship to God will be close, like that of a pilot and a copilot. But there will never—not for a single moment—be any doubt in our minds as to who is at the controls.



Watching the World



Gamblers on the Increase

◆ A few years ago the National Commission on gambling said that the U.S. had 1,100,000 persons with an uncontrollable urge to gamble. Today's estimate is much higher. According to the National Council on Compulsive Gambling, there are about 6,000,000 compulsive gamblers. Whatever the actual figure is, authorities believe that the number is increasing because of the widespread legalization of gambling. Some form of gambling, such as lottery tickets and pari-mutuel gambling at racetracks, is legalized now in 44 of the 50 states.

Record Rise of Terrorism

◆ In 1979, over 3,000 incidents of terrorism world wide brought death to some 587 people. This compares with 1,511 terrorist incidents in 1978. And since 1970, politically motivated assassinations, kidnappings and bombings have grown nearly fourfold. Almost half of the incidents occur in industrial nations, and most of the victims have been North Americans and Europeans. The U.S. Central Intelligence Agency predicts that this trend will continue to grow, because terrorists "may believe that a larger number of casualties are now necessary to generate the

amount of publicity formerly evoked by less bloody operations."

Worrying About War?

◆ The U.S. government has taken some little-known steps that indicate concerns about the future. For example, the Federal Emergency Management Agency will, reportedly, double the amount of opium salts it has on hand for emergencies. The extra painkiller, reports *Newsweek* magazine, is because "defense experts estimate that survivors of a nuclear war would require far greater amounts of such drugs than authorities had previously calculated." Additionally, the U.S. Army has announced its notification of some 200,000 retired officers and enlisted soldiers up to age 60, who will be subject to possible recall during a crisis. "Never before in peacetime have retired soldiers been subject to mobilization," observed the *New York Times*.

Are Japanese Still Pacifists?

◆ Due to lingering war memories, many Japanese believe that their country is largely pacifist in its thinking. Several local magazines have polled Japanese youths on how they would react to a conscription law. The *Weekly Post* reports that, of boys in their high

teens, 70 percent said they would refuse to obey a summons to "take up arms for their country." In contrast, the Japan Junior Chamber of Commerce reports that only 41 percent of young businessmen were opposed to a general conscription. The majority (53.9 percent) of these businessmen supported nuclear armament for Japan.

Alaska's 'Giant Wire'

◆ The Alaskan oil pipeline has an unexpected property. "It could be described as a giant electric wire," says the *London Times*. As a result, "large surges of electric current have been detected." It seems that magnetic fluctuations in the northern atmosphere are particularly strong, inducing a current in the walls of the Alaska pipeline, as though it were a wire in a moving magnetic field. Currents of over 50 amperes have been measured, and up to 1,000 amps are expected during periods of greatest atmospheric disturbance. (Average household outlets will carry about 13 amps.) Scientists say that the only problems this could create are more rapid corrosion of the metal and interference with the pipeline's electronic monitoring equipment.

Improving Surgical Skills

◆ The "Medical News" section of the *Journal of the American Medical Association* (JAMA) recently discussed the new Japanese-developed "artificial blood" (Fluosol-DA), noting that all three Americans who have received the substance "have been Jehovah's Witnesses." The article observes that such a blood substitute could "be a boon especially to members of this faith, who number about 2 million worldwide." The *Journal* also noted that some "physicians have not wanted to take the risk that the patients will bleed to death and have de-

clined to treat them." On the other hand, in its comments on one surgeon who has used the new blood substitute, JAMA stated: "Over the years, [California surgeon Ron] Lapin has performed surgery [without blood] on about 2,500 Jehovah's Witnesses, often using electrocautery to minimize bleeding. Only three of these patients have died . . . Even in the absence of Fluosol, says Lapin, 'we tend to transfuse a little too much in this country. Working without blood is a technical skill that anyone can learn.'"

Aluminum and Senility

◆ Using a very sensitive analytical method, two researchers have confirmed earlier findings of a link between aluminum and senility in the aged. By means of scanning electron microscopy, together with X-ray spectrometry, they detected "a lot of aluminum in neurons containing neurofibrillary tangles" in brains of the aged, says the report in *Science News* magazine. "Such tangles are one of the major characteristics of senility." Aluminum, notes the magazine, has "been introduced into our lives through various industrial products—airplanes, buses, trucks, windows, roofing, foil, cooking utensils and others."

Sound of Music

◆ A Long Island, New York, carpenter could not sleep because he kept hearing rock music when his radio was not playing, so he called the police. The policeman who investigated finally noticed a faint noise coming from the complainant's head, and music could be heard clearly by cupping an ear against the man's face. The officer tried dialing different stations on a radio, and sure enough, found one that matched—broadcasting from Hamden, Connecticut, 30 miles (48 km) away. Was there anything new in

the woodworker's life aside from the rock music? Yes, a set of false teeth. It seems that metal in the teeth was acting as a radio receiver, while the carpenter's jawbone amplified the music right to his ear.

'Shrinking Church' in Germany

◆ "The Catholic Church is shrinking," reports the German newspaper *Süddeutsche Zeitung*. Between 1970 and 1978, Catholics in the Federal Republic of Germany decreased by about 400,000. And during the same period the number of Protestants diminished by 1,900,000. According to a report issued by the secretariat of the German Bishops' Conference, 52,300 persons left the Catholic Church during 1978 alone. Even with this reduction in parishioners, the *Frankfurter Allgemeine Zeitung* noted that "a number of parishes . . . are being cared for by neighboring clergymen, because of the shortage of priests."

Forests Are Falling

◆ The U.S. National Academy of Sciences reports that tropical forests around the world are being lost more rapidly than previously thought. "Even if these (depletion) rates were constant, they would lead to a total destruction of all tropical forests worldwide within 50 years," said the report. "But the rates are not constant—they are accelerating rapidly." The forests are being lost to logging, farming and ranching, erosion and firewood gathering. One estimate suggests that deforestation is occurring at a rate of 50 acres (20 ha) a minute, 72,000 acres (29,000 ha) a day, 25,000,000 acres (10,000,000 ha) a year!

Church's First Concern?

◆ Cardinal G. Emmett Carter, Roman Catholic archbishop of Toronto, recently spoke to students at the University of

Toronto in favor of a resolution that "human rights constitute the primary concern of the church." Even with his advocacy, the resolution was soundly defeated by students who agreed with a speaker from St. Michael's College who said that the kingdom of heaven and spiritual life should be the Church's primary concern. But, shedding some light on how Church concerns often affect the average parishioner, when this latter speaker asked rhetorically, "What is the primary concern of the church?" one student shouted, "Bingo."

"Technological Resurrection"

◆ The Brazilian government is reported to have purchased 11 steam locomotives from Argentina, where they had been retired from service. The steam locomotives will be used in the southern part of the country to transport coal from the mines to the port of Imbituba, in Santa Catarina State. Reporting on the matter, the *Gazeta Mercantil* said: "This could be one of the rare cases of technological resurrection, caused by a reversal of economic conditions: with petroleum so expensive, coal has again become important and has led to reviving the mines, requiring the strengthening of its transportation system. It is the coal-burning locomotive, which burns cruzeiros instead of dollars, that is the most suitable machine for transporting its own fuel." (Imported oil must be paid for in dollars, whereas coal is a national product, paid for with the national currency.)

World Hunger Report

◆ The U.S. Presidential Commission on World Hunger spent two years studying the matter and has now released its report: It disclosed that one out of every eight persons world wide is afflicted with malnutrition. If developing nations do not increase food production, it said, there

will be a major food crisis within 20 years. Even now, it said, "there are more hungry people than ever before."

Inflation in China

◆ The People's Republic of China has long declined to admit that there has been any inflation in that vast land. But now the Peking government has conceded that during 1979 it had an inflation rate of 5.8 percent.

Nun in Politics

◆ The mayor of Dubuque, Iowa, is a nun who has said that she does not plan to quit her job. She believes that the pope's recent directive telling priests to stay out of politics applies only to the clergy and, "in the Catholic church, women have never been in the

category of clergy." She further explained her position by describing politics as a "way of service." She said she could not understand why the pope took the action he did anyway, and added: "We're all trying to sort it out."

Incorrigibility

◆ An 18-year-old man in Sydney, Australia, who recently was sentenced to weekend detention for illegal use of an automobile was back in court again. His lawyer claimed that he lost his job and did not have the money to pay his fare to go to jail. So he stole a car to drive there. The magistrate sentenced him this time to 12 months in jail and told him: "You are an incredible man and it is quite clear it is useless to extend you any further leniency."

Gold-Leaf Therapy

◆ Dr. Naomi Kanof, a Washington dermatologist who teaches at Georgetown University Medical School, has long believed that gold leaf is effective in treatment of stubborn skin ulcers. She continues to report success with the gold-leaf therapy. Gold leaf, obtained from art-supply stores, is first sterilized in an autoclave. It is then cut into pieces and molded to the wound. Meanwhile, the doctor removes debris from the ulcer and it is cleansed with alcohol. The gold leaf then becomes the only dressing and can be changed every five to seven days. Dr. Kanof believes that the advantage of gold-leaf therapy for skin ulcers is that it encourages the body to send more blood to the wound.

