

Awake!

MARCH 8, 1981



IS SMOKING HERE TO STAY?

FEATURE ARTICLES

Smoking is a deeply entrenched habit for hundreds of millions of persons. Countless others who do not smoke are exposed to the smoke of those who do. Since there is clear evidence of the damage it does, even to exposed nonsmokers, should it be prohibited? How can a person stop smoking?

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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.

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SIGH OF THE LAST DAYS

Have You Ever Wondered ...

Why Do Jehovah's Witnesses Call At Your Door?

IT IS unusual for a stranger to come uninvited to your door to discuss religion. Even devout religious leaders don't do it. In fact, few persons will spend time calling at the homes of their neighbors to discuss spiritual matters. Perhaps you've noticed how people can live side by side without taking any real interest in their neighbors.

SHOULD PEOPLE TAKE MORE INTEREST IN THEIR NEIGHBORS?

Most persons will say, Yes. They know that when neighbors communicate, even if they don't always agree, an atmosphere of friendship can exist. Would not our world be more secure if there were more trust and a freeness of speech among neighbors?

But we see just the opposite. Many large cities have become cold concrete jungles filled with persons who have forgotten how to care about others. One artist, after living for years in a large city, finally left, saying: "Nobody smiles. I just don't want to live in a society like this any more."

Yes, many discouraged persons welcome a smile and some pleasant news. For this reason they have appreciated cheerful calls by Jehovah's Witnesses. However, many hesitate to talk to them because their own religion is different from that of the Witnesses. They feel that the Witnesses want them to join their church.

ARE THE WITNESSES SEEKING CHURCH MEMBERSHIP?

Frankly, no. They are what their name states: witnesses. A witness testifies to what he has seen and heard. The founder of Christianity, Jesus Christ, came to "bear witness to the truth" and his first-century followers imitated him by 'speaking about the things they saw and heard.'

—John 18:37; Acts 4:19, 20.

Jehovah's Witnesses have 'seen and heard' many useful Bible truths from their personal and congregational study. The application of this knowledge has led them to happier family lives, to their overcoming ruinous habits, getting along better with others, enjoying a good conscience, finding self-respect and having hope for the future. Since they personally have benefited, they want to share such Scriptural truths with their neighbors. This information has been treasured by many whom they contact and has helped millions to find greater happiness.

However, if you have ever talked to one of the Witnesses, you know that their concern is not limited to having a better life amid today's distressful conditions. There is an air of urgency about their message.

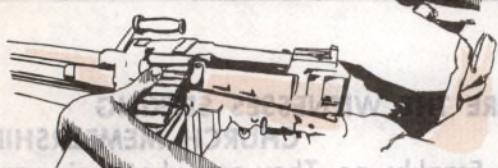
JUST WHY ARE THEY SO CONCERNED?

The Witnesses seriously believe what the Bible says at 2 Peter 3:7, 13: "The heavens and the earth that are now are

SIGN OF THE "LAST DAYS"

"Nation against nation."

—Matt. 24:7.



"Outbursts of disease."

—Luke 21:11, Bible
in Basic English.



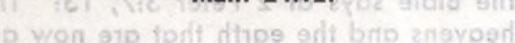
"Food shortages."

—Matt. 24:7.



"Increasing of lawlessness."

—Matt. 24:12.



stored up for fire and are being reserved to the day of judgment and of destruction of the ungodly men. But there are new heavens and a new earth that we are awaiting according to his [God's] promise, and in these righteousness is to dwell."

Imagine what the "destruction of the ungodly men," followed by a world in which "righteousness is to dwell," would mean! Eliminated forever would be racial strife, crime, wars and all other violence. The Bible also promises the permanent end of food shortages, high cost of living, sicknesses and death. Yes, it even promises a resurrection of those in the graves! —Ps. 72:16; Rev. 21:3, 4; John 5:28, 29.

Just think how much hope these promises could bring into a person's life! Jehovah's Witnesses know this, and that's why they want to reach as many as possible by going directly to people's homes. They want these to know that the awaited 'new heavens and new earth' are very near.

ARE WORLD CONDITIONS

REALLY THAT URGENT?

The Bible foretold that just prior to God's taking action against the wicked there would be a "sign . . . of the conclusion of the system of things." (Matt. 24:3) The fulfillment of this "sign" on the world scene would provide clear evidence that the end was near. At the left are listed some of the features of the sign of the "last days." As illustrated, you can see its fulfillment in world conditions every day! —2 Tim. 3:1-5.

Rather than dishearten us, Jesus said that these distressful conditions should cause us to 'lift our heads up, because our deliverance (into a new order) is getting near.' (Luke 21:28) It is to bring you this good news that Jehovah's Witnesses call at your door.

IS SMOKING HERE TO STAY?

PART 1

MOST people on earth either smoke or are, at some time, exposed to the smoking of others. Practically everywhere people live, cigarette smoking especially is an entrenched habit.

Thus, when the Tasaday tribe was discovered in a Philippine rain forest a few years ago, their unfamiliarity with tobacco was regarded as strong proof of extraordinary isolation. Yet cigarettes are of relatively recent origin.

A Short History

Less than 500 years ago Christopher Columbus became the first European to encounter the smoking habit. Indians in the New World smoked tobacco in pipes. By the 1600's Europeans were smoking hand-rolled cigarettes. Then, in the 1880's, the first efficient cigarette-making machine was invented.

It was especially during World War I that cigarette smoking gained widespread popularity. And it is only in the last 40 years or so that women generally have begun smoking. Now cigarette use is phenomenal.



A Booming Industry

During 1978 some 4,200,000,000,000 cigarettes were produced! That is enough cigarettes for each man, woman and child on earth to smoke nearly *three every day*, or 1,000 a year! Since about half of earth's population is under 20, that is 2,000 cigarettes a year for every adult member of the human family!

In China alone hundreds of millions smoke. Also, more than 55 million do so in the United States, 34 million in Japan, 18 million in Britain, and so on. It is not unusual for a person to smoke 10,000 or more cigarettes a year. Surely, you may assume, such a popular habit is here to stay. Yet some believe otherwise.

A cigarette industry executive said: "We're preparing to phase out tobacco. Not next year, but perhaps in 20 years."

United States cigarette companies have also moved into other enterprises. All of them have dropped the word "tobacco" from their company names.

John Pinney, director of the U.S. Office of Smoking and Health, claims: "Smoking is going out of style." Why would he say this about a habit to which a major part of the human family is addicted?

Exposing a Killer

"We are in a new age of pandemics," wrote Dr. Jean Mayer. Nearly half the



"The first signs of an epidemic of smoking-related disease among women are now appearing"

men in Western countries are dying of heart disease, and cancer kills many of the rest. Cigarette smoking, evidence reveals, is a major cause of these terrible plagues.

The British Royal College of Physicians called smoking "as important a cause of death as were the great epidemic diseases such as typhoid, cholera, and tuberculosis." The U.S. Public Health Service says that smoking is our "foremost cause of preventable disease and death."

The evidence has kept accumulating. In January 1979 the U.S. surgeon general released a report on smoking, citing 30,000 research papers as references. "Cigarette smoking," said the report, "is the single most preventable environmental factor contributing to illness, disability, and death in the United States." Commenting editorially on the report, the New York Times noted: "The weeds are killing more than 350,000 Americans each year."

The U.S. surgeon general's report in 1980 highlighted smoking's disastrous effects on women, who started more recently to smoke *en masse*. "The first signs of an epidemic of smoking-related disease among women are now appearing," it said. "Within three years, the lung-cancer rate is expected to surpass that of breast cancer."

Dr. Halfdan Mahler, director general of the World Health Organization, said last March: "Smoking is probably the largest single preventable cause of ill health in the world."

If you were a smoker and hundreds of respected medical authorities told you such things about your habit, what would you do?

Going Out of Style?

Tens of millions of smokers, responding to the evi-

dence, have stopped smoking. In the United States alone there are some 30 million ex-smokers. Most men in the U.S. smoked in 1965, but by 1979 less than 37 percent did. During this period, even the number of women smokers dropped from 32 percent to 28 percent. More than half of Canada's adult population smoked in 1965; now less than 42 percent do.

Yes, many smokers have been helped to quit. In 1978, 2,000,000,000 fewer cigarettes were consumed in the United States than in the previous year. Optimistically, Daniel Horn of the National Clearinghouse for Smoking and Health proclaimed: "The war against smoking is won. All that remains is mopping up." But is this true?



Teenagers, searching for adult identities, are exploited by the tobacco industry

Not by a long shot! As an official of the Tobacco Institute responded: "We don't intend to sit idly by and watch our industry be destroyed." So \$875 million (U.S.) was spent in a recent year on cigarette advertising, more than was spent on any other product sold in the United States. Actually, the 2,000,000,000 decline in U.S. cigarette consumption was only from 617 billion cigarettes to 615 billion, less than one third of 1 percent decrease.

The fact is, the cigarette industry continues to grow, as new markets are exploited in so-called Third World countries. In a recent year the U.S. increased its tobacco exports by more than 20 percent! Thus 100 billion more cigarettes were produced worldwide in 1978 than in 1977.

To ensure that smoking doesn't go out of style, the tobacco industry has exploited another market—the young. As psycholo-

gist Dr. Ronald Shor explains: "Teenagers are trying to find meaningful adult identities and they are trying to find a way to live happy and normal adult lives without having to give up their youthful spirit. That's exactly what the [cigarette] ads say being a smoker can do for you."

Thus 6,000,000 U.S. youths under 20 now smoke. A larger percentage evidently do in other countries, as the *World Health* magazine observes: "In Belgium, 50 per cent of the young people smoke by the age of 15. In the Federal Republic of Germany, 36 per cent of the 10- to 12-year-olds are already confirmed, regular smokers."

But why is a product known to cause terrible diseases not prohibited, rather than blatantly advertised as being good for you? And, if the dangers of smoking are so well established, why do so many millions continue to smoke?

WHY SMOKING IS SO POPULAR

PART 2

DESPITE health warnings and anti-smoking campaigns, smoking is still very popular. In fact, many persons smoke more than they did before.

From 1965 to 1978, the number of cigarettes used in the United States leaped by nearly 90,000,000,000, yet the number of smokers remained about the same. Why the increased consumption by those who smoke?

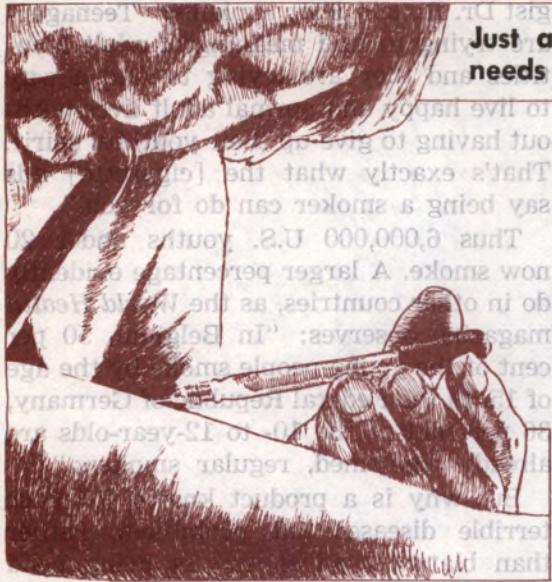
Nicotine and Tar Content

The reduced content of nicotine and tar in cigarettes is apparently a factor. Nicotine, an important ingredient of smoking tobacco, is a poisonous drug used commercially in insecticides. And tar is the particulate matter of the smoke, also called

"the sticky residue of tobacco smoke." Because nicotine and tar are dangerous to health, tobacco companies have been cutting down on the amounts in their cigarettes. With what results?

One is that smokers tend to smoke more cigarettes. "In preliminary experiments," reports *Medical World News*, "seven heavy cigarette smokers smoked an average of 25% more cigarettes per day when shifted to a low-nicotine brand." Dr. Stanley Schachter, who conducted the experiments, therefore concludes that "the campaign for low-nicotine cigarettes is misguided."

But why are more cigarettes smoked when the nicotine and tar levels are lower? In particular, it is to satisfy the smoker's craving for nicotine—to get the amount



Just as a heroin addict needs heroin to ward off irritability...

to which he has been accustomed. The nicotine reaches the brain within a few seconds after the smoker inhales. So each puff, Dr. Michael A. H. Russell explains, represents a unit dose of nicotine. It is, he says in *Drug Metabolism Reviews* (1978), like getting an injection of heroin.

A heroin addict may go several hours before he craves another injection. After smoking a cigarette, it takes about 20 to 30 minutes for the nicotine to dissipate from the brain to other organs. That is about the time lag between cigarettes for heavy smokers—when another “injection” of nicotine is needed.

Yet is it fair to compare the craving for a cigarette to that for heroin? Is nicotine really addictive?

Is Smoking an Addiction?

Commonly, persons say they smoke because it relaxes them, relieves stress and makes them feel calm. But experiments show that, rather than actually relaxing

the smoker, smoking simply enables the smoker to ward off adverse withdrawal symptoms.

This fact was revealed when both nonsmokers and smokers were exposed to stressful situations. Smokers who smoked high-nicotine cigarettes fared better in such situations than when they smoked low-nicotine cigarettes or none at all. But they fared neither better nor worse than nonsmokers in the same situations. The conclusion: “Smoking doesn’t make a smoker less irritable or vulnerable to annoyance,” Dr. Schachter said. However, he added, “not smoking or insufficient nicotine makes him more irritable.”

Just as a heroin addict needs heroin to ward off irritability and other such symptoms, so a smoker needs his nicotine for a similar reason.

Cigarette smoking is now considered by authorities to be a form of addiction. According to the report *Smoking or Health* by the British Royal College of Physicians, it “is a form of drug dependence different from but no less strong than that of other addictive drugs.” The report concludes: “Most smokers continue to indulge in the habit because they are addicted to nicotine.”

Dr. M. A. H. Russell, on the basis of considerable research, states plainly: “If it were not for nicotine in tobacco smoke, people would be little more inclined to smoke cigarettes than to

...so a smoker needs nicotine for a similar reason



blow bubbles or light sparklers." Although other factors may also be involved in making the habit so entrenched, obviously many smokers are physically addicted. This is evidenced by their agony when they go without cigarettes. Describing his withdrawal, Budd Whitebook wrote in *Harper's* magazine:

"My body was sicker than I thought it could be. The joints in my arms and shoulders and the muscles in my chest and my calves hurt so badly the first night I hid in the dark and cried. That pain lasted only one day, but for at least a week I was always aching somewhere. My mouth, nose, throat, stomach, and each tooth were deprived of smoke and nicotine, and their reactions lasted much longer. I kept arching my mouth wide open as if adjusting cheap store-bought teeth. My throat was sore as if I had smoked too much, perhaps from inhaling too hard on an absent cigarette. I blew my nose needlessly. It is staggering how many parts of me—phalange, organ, membrane, and hair—wanted a smoke, each in its own sore way. For two full weeks I was nauseated."

'Isn't it criminal,' you may ask, 'to promote a habit that is so addictive and harmful to health?' Why is it done?

Anything for Money

Even persons considered kind and respectable are known to do practically anything for money. Yes, they will even kill. Governments at times go to war, sacrificing many lives, in order selfishly to protect economic interests. Could there be a parallel with the promotion of cigarette smoking?

The *Medical Tribune* states: "Cigarettes are one of the major causes of death in the United States, yet most governmental bodies have repeatedly demonstrated an unwillingness to protect the public or, worse than that, act to aggravate a malignant situation through subsidies to tobacco growers."

The *New York Daily News* said: "The government's attitude toward tobacco is a study in hypocrisy. . . . it has provided

tobacco price supports since 1938, steadily increasing the amount to the present \$65 million, including an allotment of \$24 million in loans for shipment of tobacco to underprivileged nations under the Food for Peace program."

The U.S. government reaps billions of dollars annually from taxes on cigarettes. But thousands of citizens also profit from tobacco. In the United States alone, the smoking habit provides a living for some 450,000 tobacco-farm families and 72,700 workers in the cigarette industry. "If we done away with this tobacco," exclaimed one grower, "we'd all be on the welfare and the food stamps. The small farmer can't make it on corn and soybeans."

Yet adjustments can be made, and people can make a living in other ways. Some years ago all of Jehovah's Witnesses who were in any way connected with the tobacco business got completely out of it. They could see how inconsistent it was for a Christian to provide a product that, according to medical evidence, "is responsible every year for more deaths than the American battlefield tolls in World War II, Korea and Vietnam combined."

But some persons may say: 'A smoker is only hurting himself. Why prohibit a product from which people feel they derive pleasure?'

In Future Issues

■ **Microwaves—How Do They Work?**

■ **Everyone Pays for Smuggling**

■ **Why Does God Permit Wickedness?**

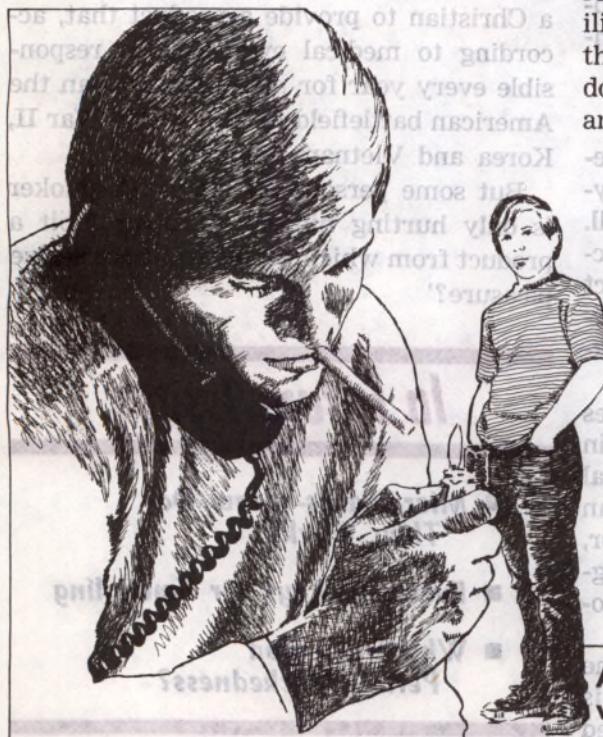
SHOULD SMOKING BE PROHIBITED?

PART 3

"I ENJOY smoking very much. If it should cost a few years off my life, it's worth it for the pleasure I get." That's how one man explained to his grandson why he smoked. Later the man died of cancer.

Yet there are longtime smokers who have survived to 80, or even 90, and enjoy relatively good health. So if a smoker understands the risks, should he be denied what he enjoys?

At the same time, does a smoker bear any responsibility as to how his cigarette habit affects others?



A Moral Responsibility?

It cannot be discounted—most smokers began smoking when they were young. In the Soviet Union, reports *World Health* magazine, "82.4 per cent of smokers questioned began to smoke before they were 19 years old." Another study showed that about one third of regular smokers started smoking before they were nine years of age!

Why do children begin a habit that most of them later say they wish they could quit? *Adult example is the primary reason.* Children smoke to appear grown-up. They desire to emulate the tough, sophisticated world of the adult. In the Soviet Union four out of five smokers came from families in which an adult smoked. So although a smoker may feel that what he does is purely his own business, his example affects others.

Particularly is this so of the example of medical personnel. They are generally viewed as persons who know whether smoking is really hazardous to health. As a *Journal of the American Medical Association* editorial observed:

"Every unit of organized medicine should squarely face up to the fact that the images of its members are a prime factor in the behavior of patients. If we smoke or permit smoking at our meetings and in our medical institutions, we are clearly saying, 'Don't believe our words, look at what we do.' Accordingly, medical establishments should

Adult example is the primary reason why children begin to smoke



Smoking is being prohibited in more and more places

NO SMOKING
Warning
Violators Subject to legal Action

eliminate smoking in all of their official functions and should urge individual members to carry these practices to their own offices and the medical institutions with which they are affiliated. After all, if physicians, who have the most knowledge of the disease-producing effects of smoking and who are generally rather disciplined people, refuse to take such action, how can we reasonably expect the average uninformed, relatively undisciplined layman to do better?"

So to back up the medical warnings on the hazards of smoking, you would expect that smoking would be prohibited in hospitals. But of the 7,200 hospitals in the United States, reported *Medical World News*, only 472 had designated nonsmoking areas, and merely 491 had banned cigarette sales. One hospital that had stopped selling cigarettes even reversed its policy "because business declined when the hospital gift shop eliminated cigarettes."

What do you think of those who put money and self-interest before the welfare of others? Do you really care how *your own* example affects others? Sadly, self-interest so often rules. For example, in 1978 the *Columbia Journalism Review* failed to find, during the previous seven years, a single comprehensive article about the hazards of smoking in any major national magazine that accepted cigarette advertising.

Smoking Is Being Prohibited

Yet the trend is unmistakable. Smoking is being prohibited in more and more places. And when persons smoke in re-



stricted areas they are often asked to extinguish their cigarettes.

Some states in the U.S. have adopted strict antismoking laws. In Minnesota, smoking is prohibited in public places, with "public places" being defined as "any enclosed, indoor area used by the general public." Utah has imposed similar smoking restrictions, so that, as it is explained, "smokers in Utah are now completely free to smoke only when out of doors or in private homes!"

Also, commercial airplanes in the U.S. are now required by law to provide a seat in a non-smoking area for every passenger who wants one.

Many smokers resent the increasing number of restrictions on their freedom to smoke. Last December a man, who was asked

**Breathing the smoke from an idling cigarette
is more harmful than inhaling smoke
while puffing a cigarette**

Smoking increases the risk of miscarriage, stillbirth and premature birth

to put out his cigarette, shot dead the police officer who asked him! Are the prohibitions justified?

Effect on Nonsmokers

Few may be aware of the tremendous damage smoking causes to others, in addition to the smoker. For example, many thousands die every year in smoking-caused fires, 2,000 annually in the U.S. alone! In Canada, more than 40 percent of all fires are directly related to smoking.

Furthermore, cigarette smoke badly pollutes the air. During a football game inside Michigan's Pontiac Silverdome a sampling of the air revealed that the level of particulates was high enough to cause an air pollution alert if it had occurred outside. Smoking by many of the 80,000 fans was responsible.

The effect of breathing smoke-filled air can be the same as if a person himself smoked. The *American Medical News*, quoting Dr. Charles F. Tate, said: "There are studies now that show if you sit in a room where smoking is going on, depending on the number of people smoking in the room and the size of the room, the non-smoker will be smoking the equivalent of a pack a day." And breathing the smoke from an idling cigarette is actually more harmful, since it contains almost twice as much tar and nicotine as smoke that is inhaled while a person is puffing a cigarette.

For some time it has been recognized that non-smoking adults with heart and lung diseases, as well as young children, suffer damage from cigarette fumes. Recently a study published in the *New England Journal of Medicine* revealed that healthy, adult nonsmokers also suffer adverse effects. "Now, for the first time, we have a quantitative measurement of a physical change," write Dr. Claude Lenfant and Barbara Liu in an accompanying editorial.



in the aforementioned journal.

Especially is it dangerous to an unborn child for a pregnant woman to smoke. Smoking constricts the blood vessels and arteries in the uterus, depriving the unborn baby of necessary oxygen and nutrients. Also, poisonous carbon monoxide passes through the placenta, reaching the baby. "It is quite clear," Dr. Mary B. Meyer of the Johns Hopkins School of Hygiene and Public Health says, "that smoking increases the risk of abortion, stillbirth and pre-term delivery."

Considering the harm done to the smoker, as well as to those who may be forced to breathe his smoke, can't you see good reason to prohibit smoking? Je-



Can a person live by Bible principles and smoke?



hovah's Witnesses have long shown that smoking is incompatible with Bible principles. "Let us cleanse ourselves of every defilement of flesh and spirit," God's Word says. (2 Cor. 7:1) Clearly, smoking defiles and often sickens the smoker, as well as those near him. How, then, can a person smoke and love others who desire to remain undefiled by the smoke?—Matt. 22:39.

YOU CAN BREAK FREE!

PART 4

THE easiest thing I ever did." That's how Mark Twain, the famous writer, described giving up smoking. "I ought to know," he added, "I've done it a thousand times."

Yes, the real challenge is not in stopping, it's in not starting again. Millions of smokers quit—perhaps for a day, or even a week or several months—but then they start again. Overcoming physical depen-

dence on nicotine often is not the hardest battle—it's resisting the strong craving for another cigarette.

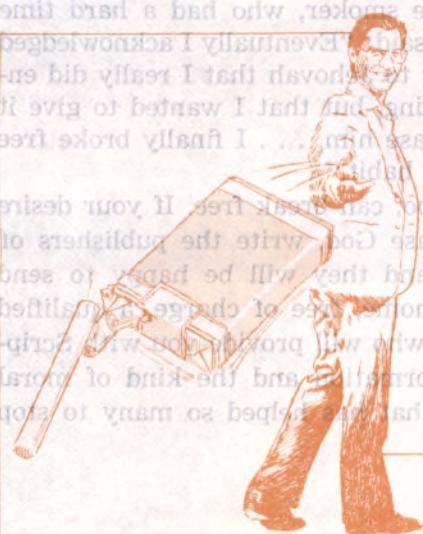
Yet, if you really want to, you can break free from the tobacco habit. The proof? A whole society of people, Jehovah's Witnesses, are tobacco free. But, as members of the general population, they were not always that way.

In many countries a third or more of adults smoke. That would indicate that about one third of the more than 2,000,000 Witnesses once smoked. How did these *hundreds of thousands* of persons break free from smoking when they became Witnesses?

Knowledge and a Decision

It is as Dr. Charles F. Tate explained in *American Medical News*: "The decision has to be made deep inside. Once this decision is made, the biggest part of the battle is over." In other words, *you really have to want to quit*. What can provide this determination?

Knowledge can. But what knowledge? Well, for many it is knowledge that smoking can kill. "Patient after patient comes in to see the result of an x-ray," Dr. Tate said. "I show them an x-ray



Millions of persons have broken free from smoking

with a tumor. They ask if it's cancer. I have to confirm their suspicion and they never want to see another cigarette again."

On becoming Jehovah's Witnesses, however, it is not simply the knowledge that smoking can kill that causes persons to quit. Rather, it is knowledge about Jehovah God—that, as the Bible says, "it is he that has made us." (Ps. 100:3) Knowing that to defile their bodies is not pleasing to the One who created them, the Witnesses refrain from smoking.—2 Cor. 7:1.

Also vital to their firm decision not to smoke is the knowledge that it harms others. Not only do children pick up this deadly habit from older ones, but the smoke itself can contribute to the early death of others. Knowledge of these things makes it impossible for a true Christian to smoke. So in obedience to God's law, "Love your neighbor as yourself," all smokers who become Jehovah's Witnesses stop smoking.—Matt. 22:39.

This is not to say that quitting is always easy for those who become Witnesses. It is pure agony for some—the hardest thing in life they have ever done. But they have stopped, with help. And so can you.

Help That Is Needed

"Anti-smoking remedies," says *New Scientist*, "are rapidly becoming as potentially profitable a venture as slimming aids." Yet, after a review of the various therapies and programs, this journal concludes: "Without exception, the aids currently on the market offer little in the way of real help to the smoker." Antismoking chemical preparations evidently have limited, if any, value.

The particular benefit of antismoking aids or programs is to provide support,

something to give persons confidence, a system to believe in. Many smokers fail to quit because they are not convinced they really can. So what they need is help to believe they can succeed. Sympathetic friends are invaluable, especially those who themselves have quit and thus can reaffirm that it is possible. Smokers who have become Jehovah's Witnesses received this kind of help to quit.

But what is especially needed to stop smoking is God's help. The apostle Paul truthfully said: "For all things I have strength by virtue of him who imparts power to me." (Phil. 4:13) A three-to-four-pack-a-day smoker—a Brooklyn, New York, housewife—told how she was able to keep her decision to quit smoking:

"My hands shook. I cried almost constantly. I was sick; the craving was agonizing. But I had made up my mind, and with Jehovah's help I stuck to it. I am now convinced that persons who do not succeed just do not really desire to give it up. They still love smoking more than they love Jehovah."

Here is a key to breaking free—it is a genuine desire to please God. Smoking can bring pleasure, as can marijuana use, promiscuous sex and other illicit behavior. So as one smoker, who had a hard time quitting, said: "Eventually I acknowledged in prayer to Jehovah that I really did enjoy smoking, but that I wanted to give it up to please him. . . . I finally broke free from the habit."

You, too, can break free. If your desire is to please God, write the publishers of *Awake!* and they will be happy to send to your home, free of charge, a qualified minister who will provide you with Scriptural information and the kind of moral support that has helped so many to stop smoking.

Honesty Is Appreciated By Others

IN THESE DAYS when dishonesty abounds, does it really pay to put forth the effort to be honest? Jehovah's Witnesses believe that it does, and they sincerely endeavor to practice honesty in matters of daily life. The following experiences illustrate that it is appreciated.

- A congregation of Jehovah's Witnesses in Carlsbad, New Mexico, received this letter from an appreciative woman:

"Yesterday about 6:15 p.m. on a return trip from El Paso we stopped at the highway rest stop near Guadalupe Peak and I inadvertently left my handbag. It included credit cards, cash, and other valuables. Members of your congregation, Mr. and Mrs. B—, found the purse and brought it to Carlsbad. They attempted to contact us but we were apparently still at the police station reporting the loss. They finally reached us and they would take no reward for their trouble.

"We will therefore appreciate it if you would accept the enclosed check for \$50.00, . . . in gratitude for their honesty.

"We think we are extremely fortunate to have citizens such as the B—'s in Carlsbad."

- Jehovah's Witnesses in Athens, Greece, have built up such a reputation for honesty that the following ad was published in one of the leading newspapers in Athens:

"WANTED: Oil-burner technicians for a permanent job. . . . Preferred are Jehovah's Witnesses."

- A Witness in New Mexico received a letter from a motel manager that said the following regarding Jehovah's Witnesses who had stayed as guests in his motel:

"To illustrate how impeccably honest these people are, I would like to tell you of an incident that occurred here. One of the 'Witnesses' took a small wash cloth when he left. It may have gotten mixed up with clothing. He mailed the wash cloth back, along with an apology. I am sure that the cost of mailing the package far exceeded the value of the wash cloth.

"Again, please accept my thanks for the privilege of serving you and your people."

- In Orange, Massachusetts, a 12-year-old boy whose mother is a Witness found \$10 (U.S.) in school and turned it in to the principal's office, despite being ridiculed by his schoolmates. As a result, the principal wrote a letter to his parents that said:

"Your son Michael has shown a high level of honesty. He found a ten dollar bill on the school's playground and brought it to the office. I am sure you are proud of the fact that he did not allow himself to be tempted.

"A child's values generally reflect those of his parents as well as his training.

"Keep up the good work!"

- The Palm Beach "Post-Times" of Florida reported the following regarding Todd, the 11-year-old son of a Witness couple. While he was out riding his bicycle one day, Todd stopped at a pay telephone. When he could not get a dial tone, he hit the coin return. At that point \$1 (U.S.) in change fell out of the phone. Todd took the money home and put it in his dresser drawer. Several weeks later he went back to the same phone and this time \$7 in change fell out. Now Todd had \$8 in his dresser drawer. Several days later, when he went back to the phone for the third time, still more change fell out. Now Todd had about \$10. What would he do with it?

Todd discussed the matter with his parents. After they talked to him about honesty, his parents decided to let him make up his own mind. What did he decide? Reports the paper: "Without saying anything, Todd hopped on his bike and, through a heavy rain on a Friday afternoon, returned the money to the local phone company office." As a result of this incident Todd's parents "received a letter of 'commendation' praising their son's honesty," from the local telephone company.

The Bible recommends that we "conduct ourselves honestly in all things." (Heb. 13:18) And it is appreciated by others.

Typesetting Enters The Computer Age

COMPUTERS are almost everywhere. They set the alarm on digital watches to get people up in the morning and control the fuel injection in their cars as they drive to work. Computer-controlled robots also make the welds that hold many cars together.

New types of office equipment that are operated by tiny computers are becoming more common, such as typewriters that remember certain words or phrases. When people are shopping, computers can automatically add up the bill and adjust the store's inventory at the same time.

Computers may also help to print your morning newspaper.

In recent years printing has entered the computer age. Most major newspapers in the United States already use computers to set type, and most European papers are moving in the same direction. In Japan, where people read more newspapers than in any other country, computers have been used to set type since the 1960's. Why the worldwide change?

Little Chips and Big Programs

Rising labor costs, combined with the growth of offset printing and competition from smaller, more flexible newspapers, all helped to push the newspaper industry toward computerization in the 1970's. But the switch would not have been possible if it were not for the abilities of the computers themselves.

What's making computers so useful? Better programming, or *software*, for one thing. Also, better *hardware*, in the form

of tiny silicon chips that are speeding up computers and giving them greater memory capacity.

These chips are made by first drawing electrical circuits that are so complex that they are compared to a street map of a large city. Then the drawings are photo-reduced and etched onto specially treated pieces of silicon. As the chips have improved, computers have become faster and more powerful, while also getting smaller and cheaper. For example, from 1975 to 1978 one company's chips increased eight-fold in memory capacity, while dropping in price by 71 percent. Another company has developed a single chip described as "the equivalent of a very large machine of just five or six years ago".

Impressive as these hardware developments have been, without proper programming instructions, or software, the most powerful computer is still useless. Using a computer without programming is like consulting an impressively bound set of encyclopedias containing only blank pages! Before computers could be used to set type in the printing industry, some clever software had to be developed.

Teaching a Computer to Hyphenate

As you read this magazine you might notice that most lines of type are of the same length. This is true even though some of these lines have more letters than others. If you typed a paragraph from *Awake!* the lines would not all be of the same length, but in the magazine the columns of type have been justified. This

soft bars before each soft bar is connected by a series of small bars.

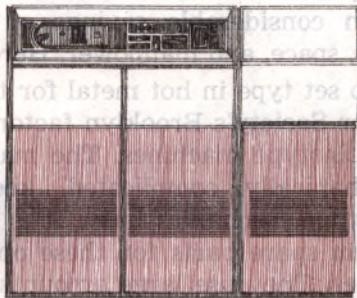
Text Entry



Computer



Phototypesetter



A Linotype can turn out 8 to 11 lines of type per minute. Text accumulated in a computer can be produced on a phototypesetter at 2,000 lines per minute means that the spacing between the words (and sometimes between the letters, too) has been adjusted so that all the lines come out the same length.

Traditional typesetting does this mechanically. But a computer must learn to count up the number of spaces in a line of type and to decide how many words will fit on the line. Then the leftover space must be spread equally between the words. This is not too difficult for most computers. The problem arises when a word must be divided in order for the line to come out right. How do you teach a computer to hyphenate or divide words properly?

Properly dividing words is not as easy as it looks, as any good secretary will tell you. This is especially true in highly irregular languages such as English.

Why not simply program the computer with a dictionary of all the words it will ever need to divide? That may seem to be a simple solution. "But, unfortunately, it just isn't practical," as a computer programmer pointed out. Why not? "You would need a very large dictionary for each language you were setting type in. Each dictionary would have to include every variation of every word the computer would ever encounter."

So what is the solution? The computer must be programmed with all the rules needed to hyphenate words correctly, and

then a special exception-word dictionary must be added to the program for the words that don't obey the rules. A good hyphenation program in English will correctly divide 95 percent of all words in the language, which means that a relatively small number of words need to go into the dictionary.

Does that mean the computer will never make mistakes? No. What about words like "former"? As a noun this word means "one that forms" and is divided form/er. But as an adjective, meaning "coming before in time," the word is divided for/mer. A human can easily tell from the context which way the word is being used, but a computer has much more difficulty doing this. A human must tell the computer how to divide such homographs. "Computers are never going to replace proofreaders," observes one of the coordinators of the Watchtower Society's computer typesetting program.

Computerized Typesetting

at Watchtower

The Watchtower Bible and Tract Society of New York, Inc., is a religious organization that has been publishing Bible literature for Jehovah's Witnesses for over 70 years. In Brooklyn, New York, this Society operates a large printing facility, which is presently changing over from hot-

metal typesetting to computerized photo-composition. What will this mean? It will mean considerable savings of time, energy, space, and manpower. Here is why—

To set type in hot metal for the Watchtower Society's Brooklyn factory requires 20 Linotype machines. The machines are mechanically complicated, keeping two full-time mechanics busy. It is difficult to obtain spare parts for these obsolete machines. They use large amounts of energy to melt lead, which is formed into slugs of type, one line at a time. It takes six months to a year to become proficient at operating such a machine.

The slugs of type, along with any pictures, are then composed, or arranged in a special metal frame called a chase to create the form of the desired page. Highly skilled craftsmen, compositors, do this. A great deal of floor space is required for special equipment and heavy tables where the compositors do their painstaking work.

All of this takes time. A single page of a Watchtower edition Bible requires about 45 minutes to be set in slugs on a Linotype machine, and another 15 minutes is needed for composition.

The composed chase of type, including a number of pages, must then be used to emboss a special paper mat, which in turn is used to cast a heavy stereotype plate from molten lead alloy. Skilled labor, extensive space, and considerable amounts of energy are needed for this process. Before this plate can be used to print large quantities it must be nickel-plated for increased hardness, and even then the job is not ready. Why not? Tiny irregularities in the surface of the plate will cause the press to print unevenly, with patchy light and dark areas. This might be acceptable in some types of printing, but it will not meet the quality standards of the Watchtower Society. Hours, even a day or more, must be spent in tedious "makeready"

before the problem is corrected and the press can begin to run.

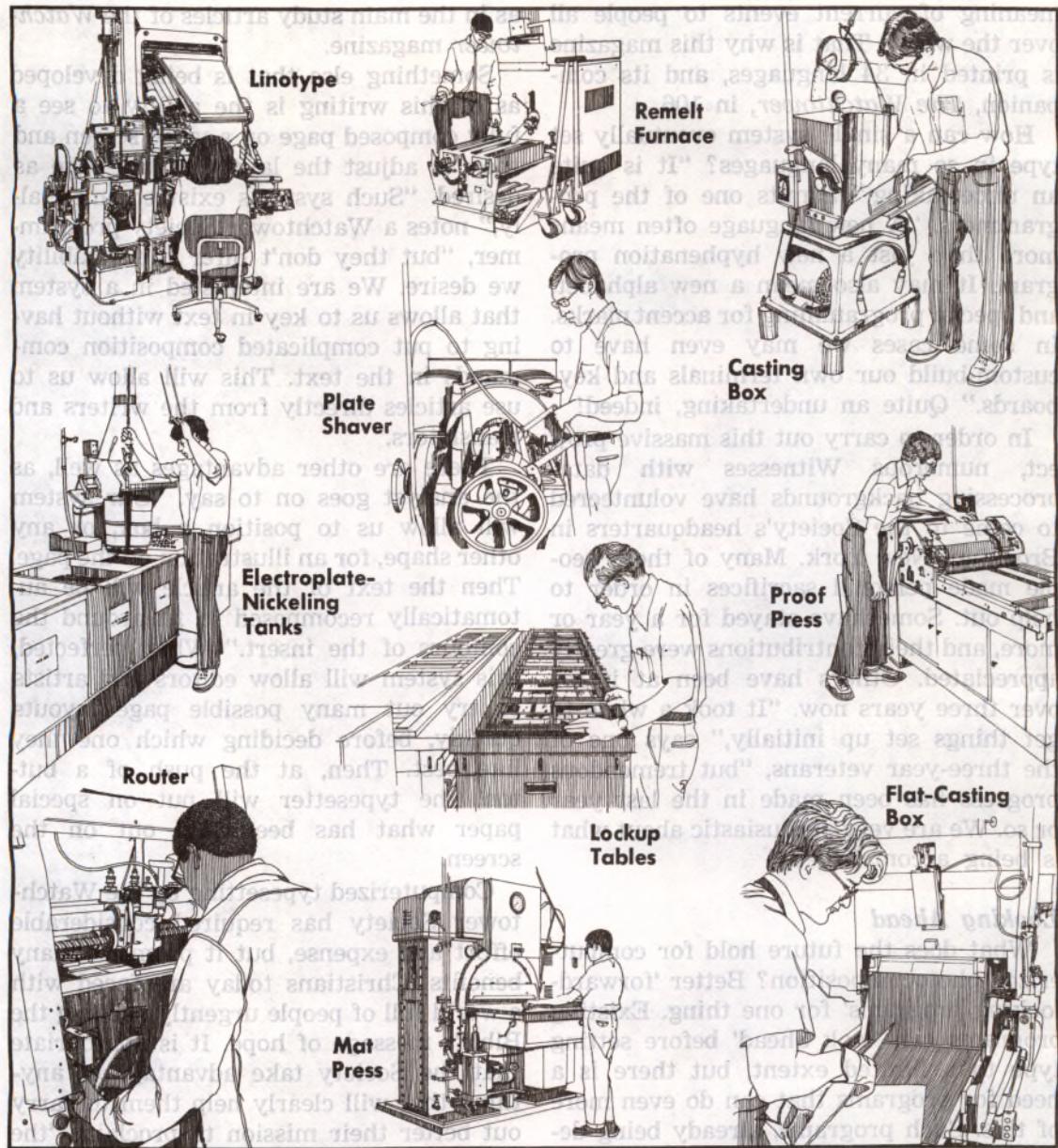
By contrast, a single computer-driven electronic typesetting system will replace all 20 Linotype machines, as well as the hot-metal platemaking equipment. This will save a great deal of space and reduce manpower needs. The computer composes text into pages, and then the typesetter exposes it on photographic paper, which is photographed in turn to make plates for offset printing.

Once the text is typed into the system, then composition work that used to take hours can be done in minutes. No more lead needs to be melted for slugs or plates, which will save expensive energy! Less personnel will be required to set type, and most need not be skilled craftsmen. The thin, light, offset plates that are produced can be mounted on the press in minutes with far less makeready, saving valuable press time.

Meeting Unique Needs

An IBM computer system has been obtained for this purpose, as well as a high-speed Autologic phototypesetter. In South Africa, highly efficient Compugraphic systems have streamlined the prepress work in the preparation of books, as well as magazines in nine local languages. Interestingly, most of the software, or programming, needed to do the computerized composition in Brooklyn has been developed by Jehovah's Witnesses themselves. Why?

"Our needs are unique," comments one of the systems analysts working on the project in Brooklyn, New York. "While it is true that there are commercial programs for setting type, they are not well suited for us." Why not? First, because the Watchtower Society did not wish to accommodate its style and quality standards to what the commercial systems produce. Also, because the Watchtower Society



All this obsolete hot-lead equipment can be replaced, resulting in considerable savings of time, manpower, space, and energy

prints regularly in 167 *languages*, far more than commercial systems presently available can do. "There are no commercial typesetting programs available for many of these languages," continues the analyst, "because there is no money to be made

by developing software for languages that very few people read."

Of course, the publishing activities of the Watchtower Society are not designed to make money. They serve to get vital information from the Bible about the real

meaning of current events to people all over the world. That is why this magazine is printed in 34 languages, and its companion, *The Watchtower*, in 106.

How can a single system eventually set type in so many languages? "It is quite an undertaking," admits one of the programmers. "A new language often means more than just a new hyphenation program. It may also mean a new alphabet, and special programming for accent marks. In some cases we may even have to custom-build our own terminals and keyboards." Quite an undertaking, indeed!

In order to carry out this massive project, numerous Witnesses with data-processing backgrounds have volunteered to come to the Society's headquarters in Brooklyn, New York. Many of these people made personal sacrifices in order to help out. Some have stayed for a year or more, and their contributions were greatly appreciated. Others have been at it for over three years now. "It took a while to get things set up initially," says one of the three-year veterans, "but tremendous progress has been made in the last year or so. We are very enthusiastic about what is being accomplished."

Looking Ahead

What does the future hold for computerized photocomposition? Better 'forward-looking programs' for one thing. Existing programs can 'look ahead' before setting type to a limited extent, but there is a need for programs that can do even more of this. Such programs, already being developed, allow the computer to decide how much space to leave at the bottom of a page for footnotes, or for study questions,

"And the gospel must first be published among all nations." —Mark 13:10, AV.

as in the main study articles of the *Watchtower* magazine.

Something else that is being developed as of this writing is the ability to see a fully composed page on a video screen and then to adjust the layout of the page as desired. "Such systems exist commercially," notes a Watchtower Society programmer, "but they don't offer the flexibility we desire. We are interested in a system that allows us to key in text without having to put complicated composition commands in the text. This will allow us to use articles directly from the writers and translators."

There are other advantages as well, as the analyst goes on to say. "Our system will allow us to position a box, or any other shape, for an illustration on the page. Then the text of the article will be automatically recomposed to fit around the contours of the insert." When perfected, this system will allow editors and artists to try out many possible page layouts quickly, before deciding which one they like best. Then, at the push of a button, the typesetter will put on special paper what has been laid out on the screen.

Computerized typesetting by the Watchtower Society has required considerable effort and expense, but it promises many benefits. Christians today are faced with a world full of people urgently needing the Bible's message of hope. It is appropriate that the Society take advantage of anything that will clearly help them to carry out better their mission to proclaim "the day of vengeance on the part of our God" and "to comfort all the mourning ones." —Isa. 61:2.

Keeping Your Job

By "Awake!" correspondent in Brazil

IN THIS industrial age, millions of persons work in factories, offices and stores so as to support their families. Even though they have a job, many feel the constant threat of losing it. Sometimes large numbers are suddenly laid off and, for them, finding a new job may not be easy. So, *keeping* their present job is of deep concern.

What can *you* do to reduce the possibility of being dismissed in the event that the firm where you work has to cut the number of its employees?

Show Interest

In the first place, try to view the firm where you work through the eyes of your employer. How so? Well, to him the firm is very important. So he appreciates it when you take a sincere interest in its welfare. This means interest not only in the work itself but also in your personal conduct and how it affects the firm.

Sincere interest in the firm's welfare includes being punctual and cooperating readily in time of need, such as when overtime work is necessary or when menial jobs must be done. Those who are overly conscious of time or of compensation show that their heart is not in their work. Bear in mind that work that is done willingly, and well, is generally well rewarded.

How could you show interest in the firm during slack moments in your department? Maybe your section needs tidying up. Or maybe you could speak to your supervisor and offer to help in another department. Employers appreciate workers who see the work that needs to be done and who take

the initiative to do it. For example, it was observed in a small ice-cream shop that three girls were waiting on the customers. However, in front of the counter, many used ice-cream cups and papers were scattered on the floor, giving the store an unsightly look. If you were the owner, wouldn't you have appreciated it if one of the girls, even though she was not hired to do cleaning, had taken the initiative to sweep up the wastepaper? Such interest in the general appearance of her work area certainly would not pass unnoticed by the owner, just as the mess on the floor did not go unnoticed by the customers.

Be Part of the Solution

Especially in large firms, employers usually have plenty of personnel problems. Do not add to these. Be a source of peace, not of dissension.

If an unexpected problem related to your work does arise, think in terms of *solutions*. What could *you* do to help to solve the problem? And if you receive instructions on how to solve it, follow them closely.

Yes, being part of the *solution* and not of the *problem* is certainly a good investment with a view to keeping your job.

Honesty and Courtesy Pay

If you had your own business, would you like to have employees that you could trust? Your employer feels that way. So, be honest with him, even in little things.

For example, without permission, never take home something that belongs to the firm. 'But they do not use this material anymore,' or, 'The firm is rich and will

not miss it' are samples of how some try to justify thievery. Remember, being honest is always the right course. Your being honest could mean the difference between losing your job and keeping it.

How determined are you to be honest regardless of what others do? Consider this situation: A man worked as manager in a building-materials shop in Rio de Janeiro. His employer asked him to use certain shady business tactics. When the manager refused to do so, he was fired. After a time, however, the shop owner became dissatisfied with what was happening to his business and decided to call back his former worker. The offer was a better salary, permission to live near the place of work in the fine house once occupied by the

shop owner and, of course, the guarantee that the employee could work without using improper selling methods.

Another newly hired man was asked by a firm's owner to lie about the merchandise. His reply: "If I would lie *for* you I would lie *to* you. No, I will not lie to you or for you." Soon the owner made him manager of the whole establishment.

Another important point: Is it not a pleasure to work with friendly and cheerful fellow workers? In a world where courtesy and good manners are on the wane, it's refreshing to meet someone who still believes in making others happy.

A bus driver in São Gonçalo, Rio de Janeiro State, Brazil, said: "Why shouldn't I help to cheer up the passengers? It doesn't cost anything to be obliging. So when someone asks to get off at a certain stop I call him, thank him for riding with me and wish him a good day. Smiles and thanks in return are a pleasant reward. When I reached retirement age, I decided to take a vacation. However, the owner of the bus asked me to come back and continue to work because the passengers were complaining about my absence."

Regarding this driver, the president of the National Confederation of Land Transport Workers wrote, "I found out his name in order to recommend him to you as deserving the best attention and consideration, as a fine driver, in every sense of the word, both as a human and as a professional." Could you imagine such a driver being fired? Or having difficulty in finding another job if it were necessary? So appreciate the value of friendliness and courtesy in helping you keep your job.

Yes, much can be done to enhance the possibility of keeping your job: Show genuine interest in your work. Be punctual. Do your best. Remember that honesty and courtesy really pay. If the day comes when the staff where you work is reduced, it may well be that you will keep your job.

HOW TO KEEP YOUR JOB

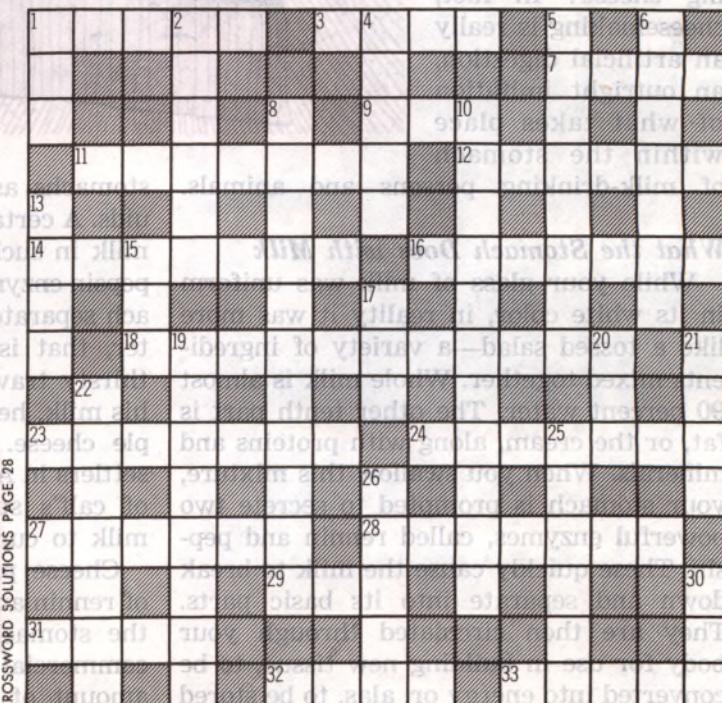
1. Be polite and respectful to your superiors and to fellow workers.
2. Follow the firm's policies. Do not suggest any great change unless you are invited to do so or have considerable experience.
3. If you are an expert, do not refuse other work simply because it is different from your specialty.
4. Be punctual, and do not miss work-days unless the situation is beyond your control.
5. During work hours, do not do personal reading or work, unless you have special permission.
6. Take an interest in your work as if the firm were your own.
7. If there is any real need for extra work or occasional overtime, cooperate without complaint.
8. Do not consider your employer to be an intrinsic exploiter. A well-done job will most likely be rewarded.
9. It pays not to be so concerned about your "rights" that you forget your "duties" as an employee.
10. If possible, avoid bothering your superiors with your personal problems, such as disagreements with fellow workers.

crossword puzzle

Clues Across

1. Defeated Sisera with Jehovah's help (Judges 4: 12-16)
3. After that victory, 1-across sang of the righteous ---- of Jehovah (Judges 5:1, 11)
7. Venomous snakes (Deuteronomy 32:33, AV, RS)
9. "No matter what it is that we --- according to his will, he hears us." (1 John 5:14)
11. His descendants cared for the tent cloths of the tabernacle (Numbers 3: 21-26)
12. Idols (Isaiah 10:10, 11)
14. Uriah was one (2 Samuel 12:7-12)
16. Paul met here with the older men of Ephesus (Acts 20:17-24)
18. Jesus' answer to Satan's temptations (Matthew 4: 1-11) [3 words]
23. Royal spouse (Psalm 45: 9)
24. After Jesus resurrected him, many put faith in Jesus (John 12:9-11)
27. Fight (2 Samuel 2:14)
28. Peter wrote a letter from here (1 Peter 5:12, 13)
29. About a U.S. gallon (Exodus 29:38-42)
31. Hannah made one yearly for Samuel (1 Samuel 2: 18, 19)
32. Nebuchadnezzar set up his image here (Daniel 3: 1-30)

33. 23-across wears gold from here (Psalm 45:9)
15. Also known as Tou, Canaanite king friendly to David (2 Samuel 8:1-11)
17. His son was chief artisan of the tabernacle (Exodus 31:1-5)
19. Elijah the ----- (2 Kings 1:3, 8)
20. Father of 26-down and grandfather of Saul (1 Samuel 14:50; 1 Chronicles 8:33)
21. His best-known son was Nimrod (Genesis 10:7, 8)
22. He could speak 3,000 proverbs (1 Kings 4:29-34)
25. Sisera died while in this state (Judges 4:17-21)
26. Son of 20-down and uncle of Saul (1 Samuel 14:50)
30. Aaron died on this mountain (Numbers 20:22-29)



CROSSWORD SOLUTIONS PAGE 28

33. 33-Deccos Weets Gold flour 12. Also known as Ton, Ca.
22. Little King friendly to
David (3 Samuel 8:1-11)
17. His son was chief officer
of Exodus (Exodus

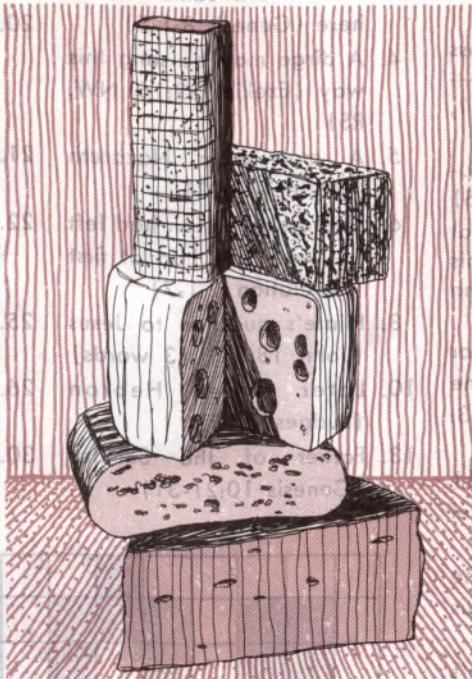
Cheese— What Gives It That Flavor?

YOU may have enjoyed a glass of milk with your breakfast this morning. But where is it now? What's happened to it?

The glass of milk has triggered a fascinating reaction within your digestive system. Did you know that your stomach responds to milk in a way that nearly parallels the steps followed in making cheese? In fact, cheesemaking is really an artificial digestion, an outright imitation of what takes place within the stomach of milk-drinking persons and animals.

What the Stomach Does with Milk

While your glass of milk was uniform in its white color, in reality it was more like a tossed salad—a variety of ingredients mixed together. Whole milk is almost 90 percent water. The other tenth part is fat, or the cream, along with proteins and minerals. When you swallow this mixture, your stomach is prompted to secrete two powerful enzymes, called rennin and pepsin. These quickly cause the milk to break down and separate into its basic parts. They are then circulated through your body for use in building new tissue, to be converted into energy or, alas, to be stored



as fat! Your body can benefit from milk only after the primary splitting is done in the stomach by rennin and pepsin. This feature of digestion is common to the milk-drinking animals, too. Science classifies all creatures that drink and digest milk as mammals.

Knowledge of this can help you to appreciate how cheese was first made and what developments have brought the art to its present state. A common story of its origin recalls the practice of using dried animal

stomachs as canteens, or vessels for liquids. A certain Asian traveler tried to store milk in such a container. The rennin and pepsin enzymes still in the mammal's stomach separated the milk into solids and water, that is, curds and whey. When the thirsty traveler opened the skin to drink his milk, he was first introduced to a simple cheese. Closer to our time, colonial settlers in America would put a small piece of calf's stomach into a bowl of warm milk to curdle it.

Cheese producers today use a mixture of rennin and pepsin that is extracted from the stomachs of calves. It's prepared in commercial laboratories. When a small amount of these enzymes is added to a

vat of milk, the vat becomes, as it were, a giant stomach. Within a half hour, the milk solids have disengaged themselves from the water in the milk and clotted together to form a semisolid mass like a large yogurt. This mass is cut into small, uniform pieces, then is heated slightly to promote greater separation of the curds from the whey—that is, the milk solids from the water in the milk. Nearly all the familiar cheeses are made in just this way.

Why the Various Flavors and Textures?

The different cultures of bacteria that are also added to the milk account for the many varieties in cheese flavor, aroma and texture. These bacteria are microscopic plants that feed on the milk solids and produce certain acids. Certain bacteria produce particular acids and lead to distinctive kinds of cheese. For instance, one culture is used to promote the slightly sweet flavor of Swiss cheese. It also provides the familiar holes or eyes in that cheese. Another bacteria is used for Cheddar. And certain unique cultures provide cheeses with real individuality: Roquefort, Limburger, Camembert. As the cheese is ripened or aged, these bacteria and their corresponding acids affect the curds—now the body of the cheese—in a predictable way to develop typical cheese flavor and characteristics.

But why does one cheese sometimes taste different from a cheese of the same name that you buy at another time? The art of making cheese is subject to many variables and influences. Whether produced by the largest corporations or in the smallest cheese factories, cheeses will vary from time to time. And if you make a number of batches of cheese at home it will happen to you, too. Any little change in the milk, bacteria culture or procedure will alter the finished product. Making cheese

with consistent flavor, batch after batch, requires rigid control.

The Aging of Cheese

How long does cheese aging or ripening take? Cheese ripening is well illustrated by the ripening of a peach. The peach may be full-sized but still hard, green, and very bitter when first picked. Slowly it will turn yellow, soften, and get juicy. If the peach is not eaten soon, it will be inedible. On just what day is this peach ready to be eaten? Well, that depends mostly on whom you ask. One person likes his peach on the firm side; another prefers his soft and mushy. And neither can understand how the other eats his that way. So, too, with cheese; but the ripening period is, of course, much longer.

The ripening temperature is the critical factor. At higher temperatures cheese ripens much faster. When ripened in a warmer room, Monterey cheese can be very acceptable in as little as six weeks. At lower temperatures it may require three months before it passes beyond the green stage. Swiss cheese can be eaten in as little as eight weeks and be very good. Or it may be four or five months before you would enjoy certain other Swiss cheese—all depending on the temperature at which it was aged. The sharpest Cheddars can benefit from up to three years in storage, and it is generally agreed that the cheese doesn't improve much beyond three years' aging. As a rule, the milder cheeses require less aging—so they usually cost less, whereas the more pronounced types are aged longer, and you pay more for them.

Learn to Enjoy It

Good cheese can be expensive. But your enjoyment of cheese does not depend on your being able to buy the gourmet varieties. Something else may contribute even more.

Whenever you can, let your cheese warm to room temperature before you eat it. When you eat cheese cold—say, right out of the refrigerator—you *feel* it in your mouth but it's not so easy to *taste* it fully. Allow about an hour out of the refrigerator per pound, but keep the cheese tightly wrapped so that it doesn't dry out. Don't worry about spoilage. It would take a number of days at room temperature to spoil cheese. Although it is a dairy product, its natural makeup includes a large enough proportion of acids to inhibit the growth of organisms that would cause spoilage.

Before you actually taste your cheese, take a moment to detect its aroma. In time you'll increase your sensitivity to various cheese fragrances, as well as those of other delicate foods. Your nose acts like a scout that sends back mouth-watering reports to your salivary glands. That ini-

tial sniff is a part of eating, you see, and it can increase your eating pleasure.

Now take a small bite. Chew it slowly. Don't be in a hurry to swallow. Think about the flavor as the cheese awakens various sensations on your tongue. Is it salty? Creamy? Sharp? Do you like it? Why? Correlate the aroma with the taste. Make yourself put it into words; it will help you to formulate the impressions in your mind. Chances are you'll never be paid by anyone for your ability to judge cheese, but you will be rewarded many times over as you enjoy more fully the food you eat.

Eating is meant to be an enjoyable part of life. It is part of the pleasant reward for having done our work. Far from being simply a means of filling our stomachs, the Creator has made it something to be enjoyed while we are doing it.—Eccl. 8:15.

Living Works Of Art

MY DAUGHTER was 13 when she first brought home a library book that introduced me to bonsai. As she showed me the photographs in the book and we both gasped in amazement over the wondrous trunks and artistic asymmetrical forms, my interest was quickly aroused. We devoured the information and before long we were at the local nursery to purchase likely candidates for bonsai. Together we cut roots, pruned branches, tied, wired and repotted. But not long after we set our trees out in the yard, it was evident that they were dying.

Years later we moved to an area where small wild trees could be dug up and used for bonsai, so I again made an attempt to grow them, this time with a little more

success. My daughter, who had since grown up, was no longer living at home. But we were together recently on a trip to Washington, D.C., where we visited the National Arboretum. We had eyes only for the National Bonsai Collection. The 53 trees that comprise the collection were donated by the Nippon Bonsai Association. It included a magnificent 180-year-old Japanese red pine from the imperial household. These trees had been cared for by generations of experts. Even if a person was not formerly interested in "tray plantings" (which is what "bonsai" literally means), he would be delighted by these living works of art. One might easily feel like Gulliver looking at a little landscape in Lilliput while viewing these bonsai.

To some, this hobby may appear to be an attempt to torment trees while twisting them into grotesque forms. However, to the Japanese, who developed the art, it is a way to have a bit of nature close at hand while living in a crowded city. To contemplate a tree planted in a shallow tray, its soil carpeted with moss in which a craggy rock is imbedded, evokes memories of a scene once enjoyed in full scale.

Perhaps you once experienced a happy time with family or friends picnicking in a grove of trees. You could take a photograph of it as a memento, or you might plant a cluster of seedlings in a *saikei* tray and have a living replica of the scene.

For those who love a variety of trees but lack the space for more than one or two that are full-size, a rugged bench in the backyard can easily hold a dozen miniature trees for display. The situation was reversed for an acquaintance of mine who avidly grew bonsai. Upon acquiring a large

property, he discontinued his bonsai hobby and turned to growing full-size trees.

We never fail to enjoy the autumn when the foliage of deciduous trees changes hues. A bonsai that has put on its autumn colors can be utterly charming close up in one's living room. Spring-blooming trees are lovely in the garden, but a sudden storm can shorten the display by knocking off the blossoms. A flowering bonsai, be it azalea, quince or wisteria, can be brought indoors away from the unpredictable spring weather and enjoyed for longer periods of time. So, then, the portability of these plants is another reason one may wish to grow them.

Essentially, bonsai are outdoor plants, for they need the sunshine, fresh air and the changing seasons to remain healthy. The necessarily copious watering and frequent spraying of the foliage would not be convenient indoors. The lack of humidity in heated homes would also adversely affect most trees, so they should be brought indoors only for special periods of appreciation or to add to the welcome of an honored guest.

Getting Results

If you have some understanding of the needs of plants and trees, you can enjoy the hobby of growing bonsai. Books on the subject have become available in direct proportion to the increased interest in the western hemisphere. Have you ever pruned trees or shrubs to shape them or to remove damaged limbs? No doubt you used lopping shears and had to climb a ladder for the tall ones. With bonsai, however, you may be working from a kitchen stool and using nail clippers instead. If you've transplanted trees successfully, you knew that the time of year was important, and in some cases you root-pruned with a spade and allowed time for the little feeder roots to grow before severing the taproot and actually moving the tree. This same



understanding will help you successfully to transplant a wild tree to a container. You will not be tempted to pick up a tree during the hot summer months only to have its foliage wither and the tree die. Nor will you hack off the root ball of a nursery-grown tree to squeeze it into a bonsai pot all in a single operation.

If house plants are your special interest, some species may be grown as indoor bonsai. Among these are azalea, boxwood, cotoneaster or *Pyrocantha*. American bonsai hobbyists are also using *Ficus exotica* and *Polycias fruiticosa* ("ming" aralia). In growing house plants we often move our tropicals to progressively larger pots as they increase in size. This is the one area where bonsai culture is different, for the roots are judiciously pruned not only to keep them within the confines of the same pot year after year, but to encourage the growth of younger roots closer to the crown. Then foliage is correspondingly trimmed, resulting in a proportionately thicker appearing trunk.

It is not to be hoped that a beginner will achieve a great deal in the first years. I can recall the weak, embarrassed smile on the face of a professional grower when I displayed my first endeavors. He didn't want to discourage me, but he couldn't sincerely compliment me. After a while you may begin to feel that some of your trees are quite good, only to attend a bonsai show and realize that, compared to the work of experts, yours is insignificant. Do not let this deter you.

"**You fruit trees and all you cedars, . . . Let them praise the name of Jehovah.**" —Psalm 148:9, 13.

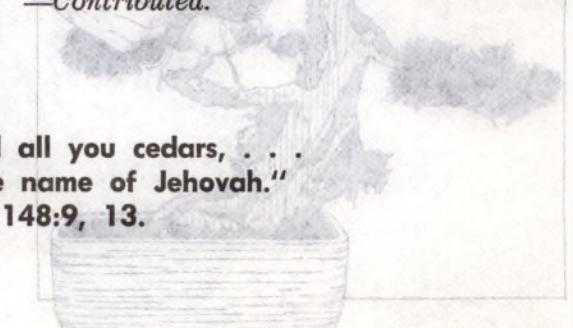
CROSSWORD SOLUTIONS

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S	A	A	T	R	11	W	12	A	S	K	13	A	14	S
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R	A	K	23	W	24	A	25	A	S	K	26	A	27	S
A	C	T	S	24	A	25	A	S	K	27	A	28	A	S
N	5	6	E	25	A	26	A	S	K	28	A	29	A	S
E	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	7	8	9	10	11	12	13	14	15	16	17	18	19	20
H	8	9	10	11	12	13	14	15	16	17	18	19	20	21
I	9	10	11	12	13	14	15	16	17	18	19	20	21	22
M	10	11	12	13	14	15	16	17	18	19	20	21	22	23
O	11	12	13	14	15	16	17	18	19	20	21	22	23	24
C	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Q	13	14	15	16	17	18	19	20	21	22	23	24	25	26
O	14	15	16	17	18	19	20	21	22	23	24	25	26	27
A	15	16	17	18	19	20	21	22	23	24	25	26	27	28
T	16	17	18	19	20	21	22	23	24	25	26	27	28	29
A	17	18	19	20	21	22	23	24	25	26	27	28	29	30
B	18	19	20	21	22	23	24	25	26	27	28	29	30	31
D	19	20	21	22	23	24	25	26	27	28	29	30	31	32
U	20	21	22	23	24	25	26	27	28	29	30	31	32	33
P	21	22	23	24	25	26	27	28	29	30	31	32	33	34
H	22	23	24	25	26	27	28	29	30	31	32	33	34	35
I	23	24	25	26	27	28	29	30	31	32	33	34	35	36
N	24	25	26	27	28	29	30	31	32	33	34	35	36	37
E	25	26	27	28	29	30	31	32	33	34	35	36	37	38

If you are one who spends some time in an uncultivated environment, it may be possible to find a natural dwarf—a treasure to the bonsai enthusiast. Or browsing through a nursery may turn up a rejected shrub that did not sell because it was asymmetrical.

Though some feel that a finished bonsai can be had in a short time, others insist that a minimum of 10 years is needed before one can have a bonsai of true beauty. Both will agree, though, that age is an appearance—an illusion effected by the hand of the bonsai man—and not always by the passage of time. So with patience you too may have a living work of art.

—Contributed.



"You fruit trees and all you cedars, . . . Let them praise the name of Jehovah."

—Psalm 148:9, 13.

Watching the World



Uniquely Nonpolitical

◆ During the last American presidential election, many church groups combined to form what they called a "Moral Majority," which was said to have had a large influence on voting. According to the *Houston Post*, Baptist clergyman John McDonald, who represents the group in Houston, Texas, "said his group would approach each candidate for an interview and support the ones believed to best represent its creed" in upcoming local elections. "He said there are 800 persons and churches on his [Moral Majority] mailing list, including just about every denomination but Jehovah's Witnesses," reports the *Post*. Evidently the latter are unique in living up to Christ's descriptions of those truly his disciples: "They are no part of the world, just as I am no part of the world."—John 17:16.

"High" Education

◆ New students at Scotland's Stirling University are given a handbook that suggests marijuana and amphetamines can be "fun" when used "sensibly." The students' association handbook, which contains a foreword by the university's principal, says that when you use cannabis, "you feel relaxed, euphoric and perceptive." It adds: "These delights are often mixed with moments of

paranoia, confusion and lack of energy, each of which is a surprisingly enjoyable part of being 'stoned.'" According to *The Scotsman* newspaper, data on price, purchase locations and how to avoid arrest for possession are provided. The university information officer, Mr. Fergus Wood, reportedly declared: "The article is quite useful if it is accepted that drugs are a part of life today. It would be a sad day if universities couldn't be liberal in what is now a liberal society."

Mozambique Bans Prayer

◆ According to a report in the *Chronicle* of Zimbabwe, Africa, the Frelimo government has made it "unlawful in Mozambique for a mother to say prayers with her own child in her own home." Yet, as the article notes, "the World Council of Churches gave huge sums of money to Frelimo" back when the churches thought the former Mozambique government "was a racist state and its people should be liberated." The churches' political dabbling has apparently backfired.

A Long-Term Aftermath

◆ Thirty-five years after two atomic bombs exploded over Hiroshima and Nagasaki, Japan, lives in these cities are still endangered. Authorities in Hiroshima claim that in the 12 months ending last August,

2,279 people in that city died of diseases related to the bomb. Professor Shunzo Okashima of the Medical School of Nagasaki says that, although the level of direct radiation is not considered dangerous, residents may be contaminated by traces of the toxic plutonium 239, which, he claims, will remain 24,360 years. Aside from posing a possible threat to health, Mr. Kenji Watanabe of the Nagasaki Social Welfare points out that "there is a widespread belief that radiation can cause genetic mutations and the victims and their children are often spurned as marriage partners."

Unusual Survival Rations

◆ After earthquakes claimed thousands of lives, first in Algiers and then in southern Italy late last year, some survivors were found amid the rubble after considerable time. Six survivors in El Asnam, Algiers, had stayed alive nearly two weeks under debris of a collapsed café, subsisting on lemonade. And in Italy, three elderly people stayed alive for about 16 days in a freezing agricultural shed, consuming just hot peppers and wine stored in the shed.

Designed for the Job

◆ Premature infants fare better with not just breast milk but breast milk from the mothers of premature infants. Why? Canadian scientists in Toronto found that in important ways such milk is different from that of full-term mothers. Not only does it contain about 30 percent more fat, making "the premature infant better able to use the protein and other nutrients of breast milk for growth," says the report in the *Journal of the American Medical Association*, but also "breast milk of mothers of premature infants has a higher nitrogen content—available as protein, urea, and free amino acids—than mature breast milk." This is used rapidly to build tissue protein

in the tiny preemies. How does the *Journal* account for such apparent wisdom? "It would seem that nature adapts mothers' milk to meet infants' needs." "Nature"?—Or the One who designed the human organism?

Link Between Vitamin Level and Cancer?

◆ Britain's medical journal *The Lancet* has reported on a five-year study that links cancer with a vitamin deficiency. The study involved 16,000 men. It pointed up the fact that those with the lowest levels of vitamin A in their blood were twice as likely to become cancer victims as those with higher levels. The link was especially noticeable with cancer of the lung, stomach and intestines. The discovery may result in a new method for detecting people who are cancer risks. It suggests that if those with abnormally low levels of vitamin A were encouraged to eat the right foods, it could help to reduce cancer. Carrots, liver, eggs and dairy products are good sources of vitamin A.

Diabetes Control

◆ A report from a division of the U.S. National Institute of Health claims that most diabetics, and especially those who are overweight, can learn to control their disorder and reduce their suffering. The system: A combination of weight reduction, sensible exercise and controlled carbohydrate diet. As has been known for some time, the greatest incidence of the condition is likely to occur in those whose family line has a history of diabetes, and if they are also obese the risk is further increased. Losing those extra pounds could prevent, or at least delay, the onset of the disease.

A second recommended step involves exercise, since it aids a person's own insulin in reducing blood sugar. As to the third step, diet, a representa-

tive of the Canadian Diabetic Association recommends "eating more complex carbohydrates (whole grain cereals, bread and starchy vegetables) rather than simple sugars (refined sugar, sweetened fruit, fruit juices, milk and certain vegetables like peas and carrots) because complex carbohydrates are absorbed at a slower rate than simple sugars." Carbohydrate intake should be spread out over the entire day, in two or three small meals, it was suggested.

Buying Food and Drink Worldwide

◆ Though Americans complain of rapidly rising food prices, they spend less of their income on food than people in any other nation. Recent United Nations figures show that food accounts for only 13.6 percent of personal spending in the U.S., compared to almost 60 percent in India, 34 percent in the Soviet Union and 23.3 percent in Japan. The U.N. report also reveals that people in Catholic Ireland spend almost half as much on alcoholic beverages as they do on food—12.6 percent of income compared to 26.7 percent. Hungary and Poland rank next in spending on alcohol at over 11 percent of income, while spending about 30 percent on food. Soviets spend 9 percent of income on alcohol, Japanese and West Germans 3 percent, and Americans 1.4 percent.

Fare Cheating to St. Peter's

◆ According to *Il Giornale* of Milan, Italy, there is a lot of fare cheating on Rome's transit system. Each year it involves from 1.5 to 7 million streetcar and bus passengers, and an amount as high as \$840,000 (U.S.). The fare is 12 cents, and "many of the free riders are foreign," said the newspaper. Fare cheating is highest on Wednesday, papal audience day, and the busiest routes are those to St. Peter's Church.

The King's English—Best?

◆ British linguist professor Geoffrey Leech has used a computer to compare British and American publications for proper use of English. Surprisingly, in his comparison of a million words, the professor found that American writings tended to use better English than those in England. "The British tend to assume they are the guardians of the language and we let the language take care of itself," he observed. "The evidence is that the Americans are more careful than we are." Leech also noted that English spoken in the two nations is "getting closer together. We are imitating you."

Crisis in Priesthood in Brazil

◆ A survey made by the Center of Religious Statistics and Social Investigations, an organ connected with the Catholic Church, reveals that from 1960 to 1963—prior to the opening made by Vatican Council II—20 priests left the priesthood in all of Brazil. That is an average of 20 per year. With the easing of the requirements for dispensation, this number increased to 2,116 for the next 12 years. That is an average of 176 per year. The reasons given for leaving the priesthood vary: for some it was a conflict with the very structure of the Church, whereas for others it was the continued imposition of celibacy. According to a report in the *Jornal do Brasil*, the majority prefer to keep secret their former position as a priest, it being "considered almost a stigma in the social environment."

Mummies off Display

◆ Since 1881 the Cairo Museum has had on display the mummies of 27 ancient Egyptian pharaohs, but now visitors to the museum have been banned from seeing them. This is because President Sadat has ordered that the mummies eventually be buried as a gesture to Islam. The mummies

will be reburied in their original tombs in the Valley of the Kings or buried collectively in a special chamber.

Government Decisions

◆ Why do so many of the decisions governments make seem to go wrong? One reason may be that noted by columnist G. K. Reddy in India's *The Hindu*: "Many [government] Ministers have come to grief by blindly following the advice of their astrologers instead of relying on their own better judgment in critical moments." No doubt the same could be said of government leaders in many other lands.

Homosexual Violence

in Prisons

◆ According to a U.S. federal prison administrator, the leading cause of killings in prisons is homosexual activity. Peter L. Nacci, Ph.D., reported that, in an investigation of

eight homicides during a 26-month period at Lewisburg Penitentiary, five were found to be motivated by homosexual activity. He added that 25 percent of 37 other assaults at this prison were related to homosexual activity.

Korean Weddings Trimmed

◆ Implementing the Republic of Korea's current campaign to encourage thrift, the Social Affairs Ministry has decreed that lavish weddings are out. A possible one-year prison term and fines of up to one million won (\$1,560, U.S.) can be exacted if a bride spends more than 830,000 won (\$1,300) on her marriage. Among other things, guidelines from the Ministry limit brides' purchases for the groom to no more than one pair of shoes and one suit. Careful laundering of her old wardrobe is advised rather than purchase of new clothing.

Largest Avalanche

◆ When Mount St. Helens erupted on May 18 of last year, it set off an avalanche on its north face that is now said to have been the largest in recorded history, according to the United States Geological Survey. The avalanche had a volume of 2.8 cubic kilometers (.67 cu. mi.) of material, enough to cover an area larger than downtown Portland and deep enough to have buried the city's 40-story First National Bank Tower.

U.S. Oil Imports Down

◆ The Department of Energy disclosed that during the first 10 months of 1980, U.S. imports of crude oil and petroleum products plunged 31.8 percent below the 1979 levels. Analysts believed that the reasons for such a big drop were the recession, more fuel-efficient automobiles and rising prices.

The Indian Ministers have come to the conclusion that following the advice of their respective ministers in regard to their own better judgment in this matter, "No harm the same country". No such decision has been taken as to what action should be taken to prevent the entry of foreign ships into our ports. The Indian Government has decided to do so much of the work as may be necessary to meet the emergency. The Indian Government has decided to do so much of the work as may be necessary to meet the emergency. The Indian Government has decided to do so much of the work as may be necessary to meet the emergency. The Indian Government has decided to do so much of the work as may be necessary to meet the emergency.

Journal of Homeopathic Medicine
in France
According to a U.S. survey
of foreign subscribers, the press
in France is still in the
same state as homeopathic society. The
first I. Macmillan's "P.D." reported
that in an investigation of