

# Awake!

MAY 22, 2005



**Are You  
Getting Enough  
Exercise?**

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A lack of sufficient exercise can put you at risk for a number of serious health problems.

What can you do to increase your level of physical activity?

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# Do You Really Need to Exercise?

**"Work out twice a week to stay in shape. Exercise 30 minutes a day. Avoid alcohol to prevent cancer. Drink alcohol to decrease your risk of heart disease. Do you ever feel overwhelmed with good advice?"**

**One day the headlines say one thing, and the next week something totally different. . . . Why can't scientists agree? Why is coffee dangerous one week and harmless the next?"**

**—Barbara A. Brehm, Ed.D., professor of exercise and sport studies.**

**H**EALTH experts often disagree on matters of nutrition and fitness. Many people get confused by the glut of information on the dos and don'ts of well-being. However, when it comes to the need for moderate physical activity, there seems to be universal agreement among scientists—if you want better health, *you must exercise regularly!*

The lack of enough physical activity has become a serious problem in modern times, especially in industrialized lands. For generations many people in such countries engaged in hard manual labor, whether farming, hunting, or building. Granted, the high level of physical exertion needed just to subsist was often a strain on our ancestors, even shortening their life span. According to the *Encyclopædia Britannica*, "in ancient Greece and Rome the average life expectancy was about 28 years."

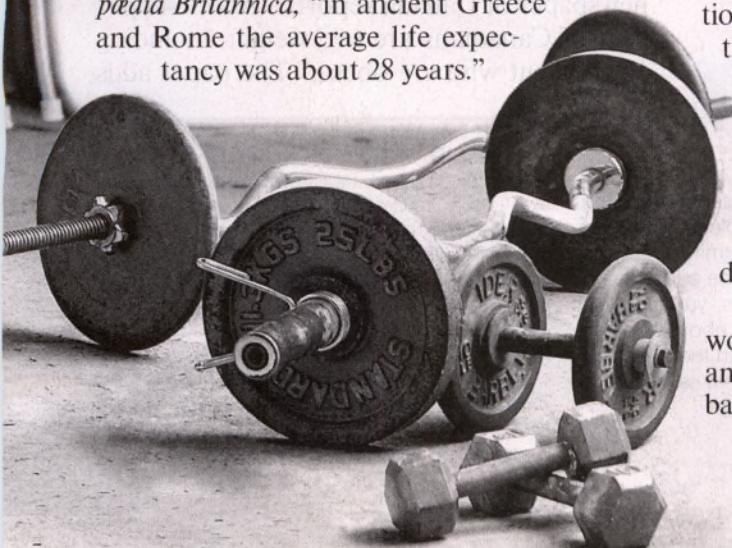
In contrast, by the end of the 20th century, the life expectancy in developed countries was about 74 years. Why the change?

## **Technology—A Blessing or a Curse?**

People today enjoy relatively better health and a longer life span than did those who lived centuries ago. This is partly because of the technological revolution. Modern inventions have changed the way we do things, and many laborious jobs have become more bearable. The medical profession has made great strides in the fight against disease, improving the health of most. There is an irony in this, however.

While modern technology has been conducive to better health, with the passing of time, it has also contributed to a sedentary life-style in large segments of the population. In their recently published report entitled *International Cardiovascular Disease Statistics*, the American Heart Association explains that "economic transition, urbanization, industrialization and globalization bring about lifestyle changes that promote heart disease." The report mentions "physical inactivity and unhealthy diet" among the principal risk factors.

In many lands just 50 years ago, a hard-working man would sweat behind the horse and plow, cycle to the village to go to the bank, and do home repairs in the evening.



The life-style of his grandchildren, however, is quite different. The modern worker may sit in front of a computer most of the day, drive his car virtually everywhere he needs to go, and spend his evening in front of the TV.

According to one study, Swedish lumberjacks, who in the past burned up to 7,000 calories a day felling trees and moving logs, now watch sophisticated machines do most of the hard work. Many of the world's roads were once built and maintained by men with picks and shovels. But now, even in developing lands, bulldozers and other heavy equipment are doing the digging and shoveling.

In some parts of China, the motorized scooter is steadily replacing the bicycle as the

preferred form of transportation. In the United States, where 25 percent of all trips are less than one mile long, up to 75 percent of these short trips are made in automobiles.

Modern technology has also produced a generation of sedentary children. One study observed that as video games become "more enjoyable and more realistic, children are . . . spending longer times on their game consoles." Similar conclusions have been reached regarding TV viewing and other forms of sedentary entertainment for children.

### **The Risks of a Sedentary Life-Style**

The drastic reduction in physical exertion has led to many physical, mental, and emotional health problems. For instance, a health agency in Britain recently reported: "Inactive children are at risk of poorer self-esteem, greater anxiety and higher stress levels. These children are also more likely to smoke and use drugs than active children. Inactive employees have more days off work than active employees. In later life, inactive people lose the basic strength and flexibility for daily activities. As a result, many lose their independence and have poorer mental health."

Cora Craig, president of the Canadian Fitness and Lifestyle Research Institute, explains that "Canadians are far less physically active at work than they used to be . . . Overall, activity is down." The *Globe and Mail* newspaper of Canada reports: "About 48 per cent of Canadians are overweight, including 15 per cent who are obese." The paper adds

## **The Expense of Inactivity**

Many governments and health organizations are seriously concerned over the financial strain that physical inactivity has placed on society.

● **Australia** - In this country the yearly health-care costs linked to physical inactivity amount to about \$377 million.

● **Canada** - According to the World Heart Federation, during just one year, Canada spent more than \$2 billion on health-care costs "attributable to physical inactivity."

● **United States** - During the year 2000, the United States spent the astronomical figure of \$76 billion on medical costs directly associated with physical inactivity.

## **Awake!**

**THIS JOURNAL IS PUBLISHED** for the enlightenment of the entire family. It shows how to cope with today's problems. 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 always stays politically neutral and does not exalt one race above another. Most important, this magazine builds confidence in the Creator's promise of a peaceful and secure new world that is about to replace the present wicked, lawless system of things.

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## Children Need Physical Activity

Recent studies have found that an increasing number of children do not engage in physical activity on a regular basis. Inactivity is more prevalent among girls than among boys. It appears that as children grow up, their levels of physical activity decline. The following are among the many ways children may benefit from regular physical activity:

- Development of strong bones and muscles as well as healthy joints
- Prevention of overweight and obesity
- Prevention or delay of problems with high blood pressure
- Prevention of Type 2 diabetes mellitus
- Increase in self-esteem and prevention of anxiety and stress
- Development of an active life-style that may prevent a sedentary adulthood



that in Canada, 59 percent of adults are sedentary. Dr. Matti Uusitupa, from the University of Kuopio, in Finland, warns that "the incidence of type 2 diabetes is rapidly increasing worldwide due to the increasing occurrence of obesity and sedentary lifestyle."

In Hong Kong a recent study suggested that among people 35 years of age and older, about 20 percent of all deaths could be related to a lack of physical activity. The study, led by Professor Tai-Hing Lam of the University of Hong Kong and published in 2004 by *Annals of Epidemiology*, concluded that the "risk from physical inactivity exceeds that due to tobacco smoking" in the Hong Kong Chinese population. Researchers predict that the rest of China "will witness a similarly large mortality burden."

Is this concern justified? Could physical inactivity really harm our health, even more

than tobacco smoking? It is widely accepted that compared with active people, inactive people tend to have higher blood pressure, a higher risk of strokes and heart attacks, a higher risk of developing certain types of cancers, a higher risk of osteoporosis, and a higher tendency to become obese.\*

*The Wall Street Journal* reports: "On every continent of the globe, even including regions where malnutrition is rife, the number of people who are either overweight or obese is rising at an alarming clip. The major culprit: the same combination of high-calorie diets and sedentary behavior that fuels the epidemic of fat in the U.S." Dr. Stephan Rössner,

\* Physical inactivity can dramatically increase the risk of certain life-threatening conditions. For instance, according to the American Heart Association, physical inactivity "doubles the risk of developing heart disease and increases the risk of hypertension by 30 percent. It also double[s] the risk of dying from CVD [cardiovascular disease] and stroke."

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a professor of health behavior at the Karolinska Institute in Stockholm, Sweden, agrees and went so far as to claim: "There is no country in the world where obesity is not increasing."

### A Global Problem

Clearly, a program of moderate physical activity is vital to our well-being. Yet, despite the well-publicized risks of physical inactivity, a large segment of the world's population remain virtually inactive. The World Heart Federation believes that between 60 and 85 percent of the world's population "is not physically active enough to gain health benefits, especially among girls and women." This organization claims that "nearly two thirds of children are also insufficiently active for their health." In the United States, about 40 percent of adults are sedentary, and about half the youths between the ages of 12 and 21 do not engage in regular vigorous activities.

A study that examined the prevalence of sedentary life-styles in 15 European countries found that the percentages of inactive people ranged from 43 percent in Sweden to 87 percent in Portugal. In São Paulo, Brazil, about 70 percent of the population is sedentary. The World Health Organization (WHO) reports that the "data gathered on health surveys from around the world is re-

markably consistent." It should not surprise us, then, that an estimated two million people die every year from causes related to physical inactivity.

Health experts worldwide view this trend as alarming. In response, government agencies around the world have started various programs designed to educate the public on the benefits of moderate physical activity. By the year 2010, Australia, Japan, and the United States hope to achieve a 10 percent increase in the level of physical activity among their citizens. Scotland aims to have 50 percent of its adult population engaging in regular physical activity by the year 2020. A report from WHO explains that "other countries that highlighted their national programmes in physical activity were Mexico, Brazil, Jamaica, New Zealand, Finland, the Russian Federation, Morocco, Vietnam, South Africa, and Slovenia."

Notwithstanding the efforts of governments and health organizations, the ultimate responsibility of caring for one's health falls squarely on each one of us. Ask yourself, 'Am I active enough? Am I getting enough exercise? If not, what can I do to break free from my sedentary life-style?' The following article will show you how to increase your level of physical activity.

## Better Health for the Elderly

It has been said that the older you are, the more you stand to benefit from a moderate exercise program. Still, many older people hesitate to engage in regular physical activities for fear of getting hurt or sick. Granted, older ones do well to consult their doctor before they begin a program of strenuous activity. Experts, however, believe that physical activity can dramatically enhance the quality of life of older adults. The following are some areas in which older ones are likely to improve with regular exercise:

- Mental alertness
- Balance and flexibility
- Emotional health
- Speed of recuperation from illness or injury
- Gastrointestinal and liver functions
- Metabolism
- Immune system
- Bone density
- Energy level



# Are You Getting Enough Exercise?

**"There is no drug in current or prospective use that holds as much promise for sustained health as a lifetime program of physical exercise."**

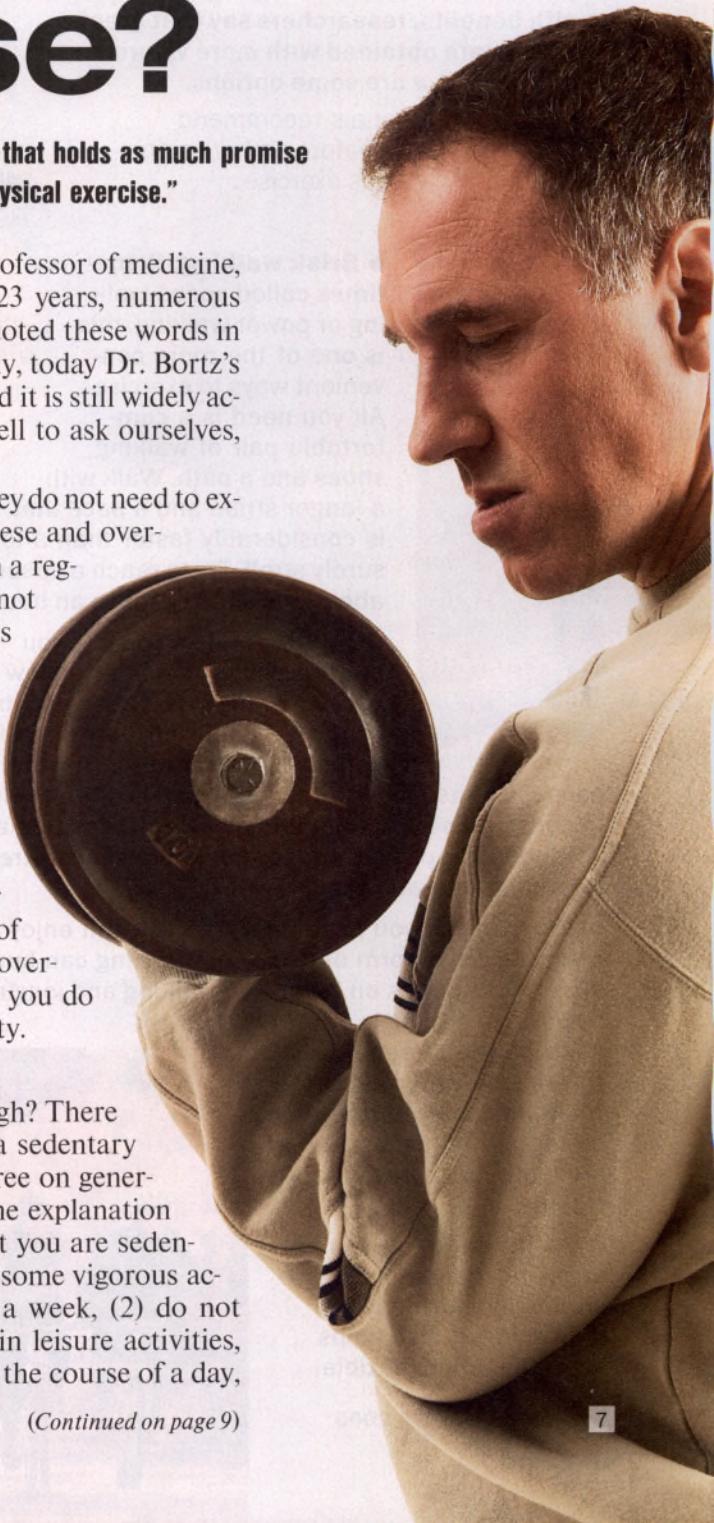
In 1982, Dr. Walter Bortz II, a university professor of medicine, wrote the above words. Over the past 23 years, numerous health experts and organizations have quoted these words in books, magazines, and Web pages. Evidently, today Dr. Bortz's advice is just as current as it was in 1982, and it is still widely accepted as sound and relevant. So we do well to ask ourselves, 'Am I getting enough exercise?'

Some have erroneously concluded that they do not need to exercise because they are not overweight. Obese and overweight people stand to benefit greatly from a regular exercise program, but even if you are not overweight, an increase in physical activity is very likely to improve your overall health and help prevent serious diseases, including certain types of cancer. Also, recent studies show that physical activity can reduce anxiety and may even prevent depression. The fact is, many who are slim suffer from mental and emotional stress, cardiovascular diseases, diabetes, and other conditions that are aggravated by a lack of enough exercise. Hence, whether you are overweight or not, if you lead a sedentary life, you do well to increase your level of physical activity.

## What Is a Sedentary Life-Style?

How do you know if you are active enough? There are various opinions on what constitutes a sedentary life-style. However, most health experts agree on general guidelines that apply to most people. One explanation used by several health organizations is that you are sedentary if you (1) do not exercise or engage in some vigorous activity for at least 30 minutes three times a week, (2) do not move from place to place while engaging in leisure activities, (3) rarely walk more than 100 yards during the course of a day,

(Continued on page 9)



## A Higher Level of Exertion

While a moderate increase in everyday physical activities can bring significant health benefits, researchers say that greater results are obtained with more vigorous exercise. Below are some options.

Health professionals recommend consulting a doctor before embarking on a program of vigorous exercise.



● **Brisk walking:** Sometimes called speed walking or power walking, this is one of the more convenient ways to exercise. All you need is a comfortable pair of walking shoes and a path. Walk with a longer stride and a pace that is considerably faster than a leisurely stroll. Try to reach a speed of about three to five miles an hour.

● **Jogging:** When you jog, you are basically running at a slow pace. Jogging has been described as the most efficient way to achieve cardiovascular fitness. However,

because of its higher impact, jogging is more likely to cause muscle and joint injury. Hence, joggers are reminded about the need for adequate shoes, stretching, and moderation.

● **Bicycling:** If you have a bicycle, you can enjoy a very effective form of exercise. Bicycling can burn up to 700 calories an hour. Like walking and jogging, however, bicycling is often done on the streets. For this reason you must remain alert as you ride, taking all the necessary precautions to prevent accidents.

● **Swimming:** You can exercise all the major muscle groups in your body by swimming. It also helps keep your joints flexible,



and it can give you virtually all the cardiovascular benefits of jogging. Because swimming is gentler on your body, it is often recommended for people with arthritis, back problems, or weight problems as well as for pregnant women. Avoid swimming alone.

● **Rebounding:** This aerobic exercise requires the use of a small trampoline. It simply involves bouncing on the trampoline. Proponents claim that rebounding improves both blood and lymphatic circulation, increases the capacity of the heart and lungs, and improves muscle tone, coordination, and balance.



(Continued from page 7)

- (4) remain seated most of your waking hours,
- (5) have a job that requires little physical activity.

Are you getting enough exercise? If not, you can start doing something about it today. ‘But I just don’t have the time,’ you may say. When you get up in the morning, you are simply too tired. At the start of the day, you hardly have enough time to get yourself ready and get to your job. Then, after a long day, again you feel too tired to exercise and have too many other things to do.

Or perhaps you are among the many who start to exercise but quit after just a few days because they find it too strenuous, perhaps even feeling sick after exercising. Others shy away from exercise because they think that a good fitness program must include grueling routines of weight lifting, lengthy daily runs covering many miles, and carefully choreographed stretching sessions.—See the box “Lifting and Stretching.”

And then there is the expense and the perceived inconvenience. Joggers need suitable clothing and shoes. For strength training you need weights or special exercise machines. A sports-club membership can be costly. Travel to the gym can be time-consuming. Still, none of the above need prevent you from leading a physically active life and reaping the health benefits.

#### **Set Realistic Goals**

First of all, if you plan to start an exercise program, do not set unrealistic goals. Start slowly, and work your way up. Scientists have recently acknowledged the value of light-to-moderate physical activity, and they recommend that sedentary people increase their activity gradually. For instance, the *UC Berkeley Wellness Letter*, a newsletter on nutrition, fitness, and stress management published by the University of California, advises: “Start by adding a few minutes of increased activity to your day, and work up to 30 minutes most,

## **Lifting and Stretching**

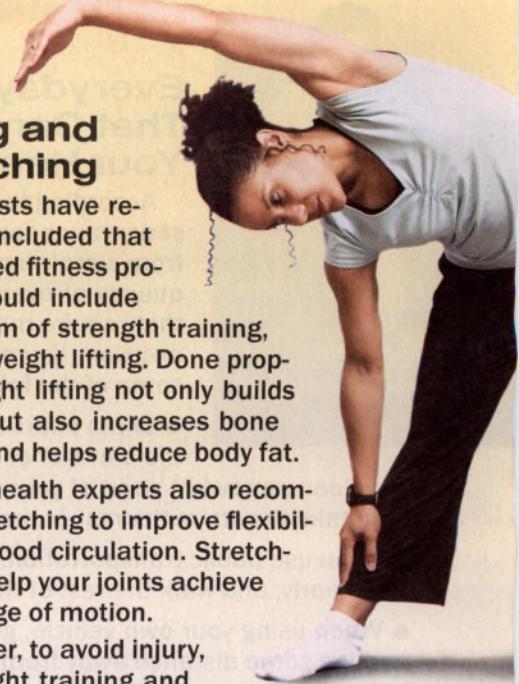
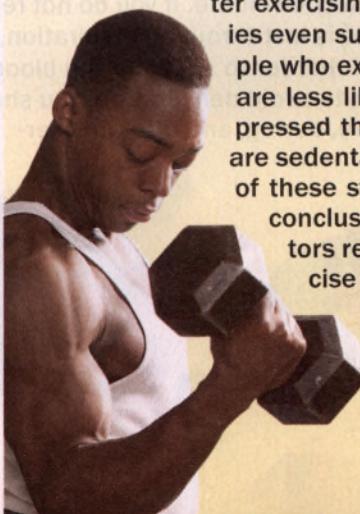
Scientists have recently concluded that a balanced fitness program should include some form of strength training, such as weight lifting. Done properly, weight lifting not only builds muscle but also increases bone density and helps reduce body fat.

Many health experts also recommend stretching to improve flexibility and blood circulation. Stretching can help your joints achieve a full range of motion.

However, to avoid injury, both weight training and stretching must be done properly. You may want to learn a few basic guidelines by reading reliable material on the subject or consulting your doctor.

## **Exercise and the Mind**

Scientists have discovered that vigorous physical activity can affect a number of mood-altering brain chemicals, such as dopamine, norepinephrine, and serotonin. This might explain why there are many claims of mental well-being after exercising. Some studies even suggest that people who exercise regularly are less likely to be depressed than those who are sedentary. While some of these studies are not conclusive, many doctors recommend exercise as a method of reducing stress and anxiety.





## Everyday Activities That Can Improve Your Health

According to recent studies, sedentary people may benefit from simply increasing the frequency of everyday activities that require moderate levels of exertion. You may want to try some of the following.

- Climb stairs instead of taking the elevator or ride the elevator to a floor somewhat short of your destination and then take the stairs the rest of the way.
- If you use public transportation, get off a few stops early, and walk the rest of the way.
- When using your own vehicle, get in the habit of parking some distance away from your destination. In a multilevel parking garage, park on a level that will allow you to climb the stairs.
- Walk while you talk. You do not always need to be seated when having casual conversations with friends or family members.
- If you have a sedentary job, find opportunities to work in a standing position, and move around whenever possible.

## Are You Drinking Enough Water?

Inadequate water consumption during exercise can be harmful. It can cause fatigue, decreased coordination, and muscle cramping. When you exercise, you sweat at a faster rate, and this can lead to a drop in your blood volume. If you do not replenish the water that is lost through perspiration, the heart has to work harder to circulate the blood. It is suggested that to avoid dehydration, you should drink water before, during, and after an exercise session.



and preferably all, days of the week.” The newsletter explains that “all you have to do are the normal things, like walking and taking the stairs, but just more often, a little longer, and/or a little faster.”

Beginners should focus on regularity rather than intensity. Once your strength and endurance have improved, you can work on increasing the intensity of the exercise. This can be done by incorporating longer sessions of more vigorous activity, such as brisk walking, jogging, stair climbing, or cycling. Eventually for a more well-rounded fitness program, you may even include some weight lifting and some stretching exercises. Many health experts, however, no longer subscribe to the “no pain, no gain” approach to exercise. So, to reduce the risk of injury and to avoid the burnout and discouragement that often lead to quitting, keep exercise at a comfortable level.

### Be Regular

Those who never seem to have time for physical activity would welcome a recommendation made by the *Wellness Letter*. It explains that “short bouts of exercise during the course of a day have an additive benefit. That is, three 10-minute periods of exertion can be almost as beneficial as one 30-minute session.” Thus, you do not need to engage in lengthy periods of vigorous exercise in order to reap substantial health benefits. *The Journal of the American Medical Association* reports that researchers have found that “light to moderate activity, as well as vigorous activity, was associated with a lower risk of experiencing coronary heart disease.”

But regularity is a must. With that in mind, you may want to look at your calendar and schedule specific dates and times for exercise. After a few weeks of a sustained exercise program, you will likely find that it has become a normal part of your life. Once you begin to enjoy the health benefits, you may actually look forward to your sessions of physical activity.

### An Active Life Is a Better Life

While it is true that as little as 30 minutes of daily physical activity can have a positive impact on your health, according to the latest medical advice, more is better. It is now recommended that to maintain a maximal level of cardiovascular health, you should accumulate up to 60 minutes of physical activity every day. Again, this can be achieved by engaging in several brief sessions spread throughout the day. The journal *Canadian Family Physician* explains that "current recommendations call for an accumulation of up to 60 minutes of activity on a given day. For some health benefits, it does not appear to matter how the minutes of activity are accumulated." This medical journal also states:

"While several studies have documented that vigorous activity is associated with lower all-cause mortality, current emphasis is on promoting moderate activity."

The bottom line is that your body is designed to move around and engage in regular physical activity. A sedentary life-style is harmful to your health. And there is no vitamin, medicine, food, or surgical procedure that can replace your need to remain active. Also, we must all face the fact that an adequate exercise routine, whether moderate or vigorous, whether done in short installments or longer sessions, requires time. Just as you make the time for eating and sleeping, it is vital that you also make the time to remain physically active. This involves self-discipline and good personal organization.

There is no hassle-free exercise program. However, the inconveniences and sacrifices involved in maintaining an active life-style pale into insignificance when compared with the life-threatening dangers of an inactive life-style. Stay active, break a sweat now and again, work those muscles—you might live a healthier and longer life!

## Cherish Your Body—It Is a Gift From God

The Bible encourages deep respect for our body and the gift of life. King David of ancient Israel wrote: "In a fear-inspiring way I am wonderfully made." (Psalm 139:14) Like David, true Christians display a keen appreciation for the gift of life. They consider properly caring for their body to be a serious responsibility.

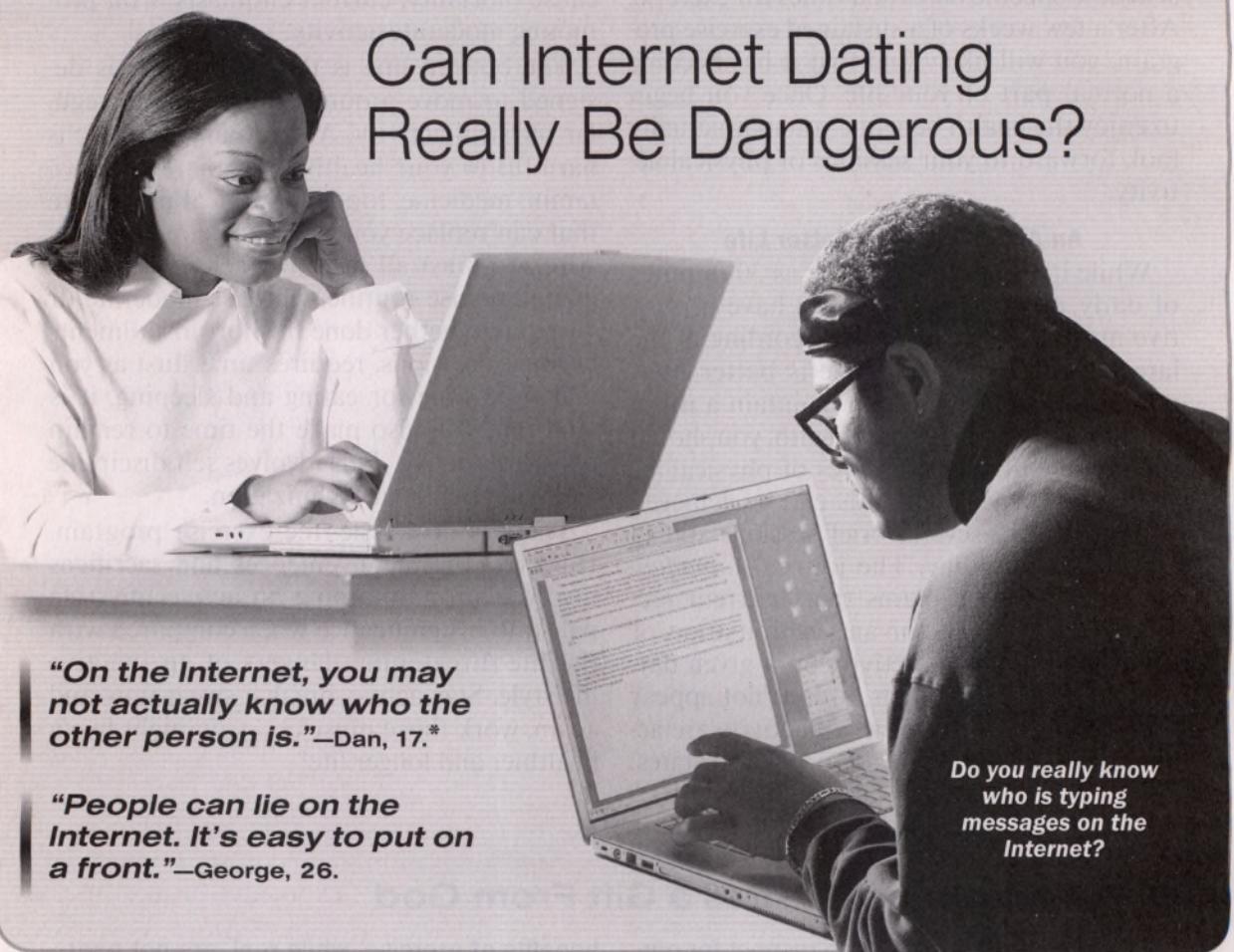
Some two thousand years ago, God inspired the apostle Paul to write: "Bodily training is beneficial for a little; but godly devotion is beneficial for all things, as it holds promise of the life now and that which is to come." (1 Timothy 4:8) Paul's words show that the

benefits of exercise, while real, are not nearly as great as the long-term benefits of a good relationship with God. Hence, true Christians strive to be balanced in their pursuit of good health, never allowing "bodily training" to outweigh their worship of God.

Christians realize that the healthier they are, the more active they can be in manifesting their love of God and neighbor. Along with proper nutrition and rest, staying physically active is vital for good health. Cherishing their body as a gift from God, true Christians strive to maintain good habits in these areas.

## Young People Ask . . .

### Can Internet Dating Really Be Dangerous?



***"On the Internet, you may not actually know who the other person is."***—Dan, 17.\*

***"People can lie on the Internet. It's easy to put on a front."***—George, 26.

***Do you really know who is typing messages on the Internet?***

INTERNET dating continues to grow in popularity worldwide. As the preceding article in this series discussed, Internet romances may blossom quickly, but they often wither when reality sets in.\* Still, there is a greater cause for concern than mere disappointment. Dating in this fashion may put you in serious danger—whether physical, emotional, or spiritual.

\* Some of the names have been changed.

\* See the article "Young People Ask . . . Should I Try Internet Dating?" in the April 22, 2005, issue of *Awake!*

How can something that looks so innocent and safe—a computer terminal right in your own home—actually present a danger to you? Some of the dangers are related to an important Bible principle. The apostle Paul wrote: "We wish to conduct ourselves honestly in all things." (Hebrews 13:18) Now, this is not to suggest that it is dishonest to use the Internet or even that using the Internet will make you dishonest. However, we must recognize that other people often are not honest and that as the quotations at the outset of this article

illustrate, the Internet seems to make certain kinds of dishonesty easier to practice and harder to detect. And when it comes to romantic attachments, dishonesty presents terrible dangers.

For example, note the kind of dishonesty described in this Bible verse: "I have not sat with men of untruth; and with those who hide what they are I do not come in." (Psalm 26:4) What is meant by "those who hide what they are"? Some Bible translations here read "hypocrites." As one reference work notes, this expression can be applied to "those who hide their purposes or designs from others, or who conceal their real character and intentions." How is such dishonesty practiced on the Internet? And what dangers does this present to those who are looking for romance?

### **Wolves in Sheep's Clothing**

A father named Michael was alarmed to learn at a seminar that a large proportion of children disobey parental rules against visiting dangerous Web sites. "What troubled me even more," he says, "was the shocking realization that pedophiles can use the Internet to lure minors into debased sexual activities." When youths use the Internet to meet new people, they can be in far more danger than they realize.

Indeed, there have been news reports of adult sexual predators who pretend to be youths as they prowl the Internet seeking to prey on young ones. According to one study, "one-in-five kids who uses the Internet has been solicited for sex." One newspaper also stated that 1 child in 33 between ages 10 and 17 were "aggressively stalked" through computer conversations.

Some young people have found, to their surprise, that the "youth" with whom they shared a budding romance over the Internet was actually an adult prison inmate. Other young ones have unwittingly become involved with sexual predators. These vile people first "groom" a prospective victim,

building trust through friendly on-line chat. In time, though, they seek to meet in person in order to carry out their perverted desires. Tragically, young people have been beaten, raped, and even murdered as a result.

Wicked people do, indeed, "hide what they are" in order to find victims on the Internet. Such predators might remind you of Jesus' illustration about false prophets who "come to you in sheep's covering" but in truth are like "ravenous wolves." (Matthew 7:15) Anonymous communication through the Internet can make it almost impossible to see through such deception. "When you talk with someone in person," says George, quoted earlier, "you may learn something from his facial expressions and the tone of his voice. But on the Internet you don't get any of that. It's easy to be fooled."

Wise, indeed, is the Bible's advice: "Shrewd is the one that has seen the calamity and proceeds to conceal himself, but the inexperienced have passed along and must suffer the penalty." (Proverbs 22:3) Granted, not everyone you meet over the Internet is a dangerous predator. However, there are additional ways in which people "hide what they are."

### **The Dangers of Deception and Secrecy**

Not surprisingly, a common practice among those seeking romance on the Internet is to exaggerate or invent good traits and to minimize or conceal serious faults. Further, *The Washington Post* quoted an author as saying: "Internet dating can be bad because people get deceived." It adds: "People often switch sexes. . . . Income levels, . . . race, criminal records, mental health histories and marital status often remain secret long into relationships." To warn others, many people have reported painful experiences of being misled by Internet dates.

Will people lie about something as important as their own spiritual side? Sadly, yes—some claim to be true Christians when they are not. Why all the deception? Again, one

factor is that the Internet makes it easy. A young man from Ireland named Sean admits: "It's very easy to pretend to be something you're not when you're typing onto a computer screen."

Many people take all this deception lightly, rationalizing that it is only natural to lie a little bit when embarking on a romance. Remember, though, that God *hates* lying. (Proverbs 6:16-19) And for good reason. Much of the pain and misery in this world stems from lying. (John 8:44) Dishonesty is the worst possible basis for any relationship, especially one that is intended to lead to a lifelong union. Worse, dishonesty is a spiritual danger; it damages the liar's relationship with Jehovah God.

Sadly, some young people have fallen into another sort of dishonesty. They have pursued relationships using the Internet and have hidden the fact from their parents. For example, the parents of a teenage son were startled one day when a young woman who did not share the family's Christian beliefs arrived unexpectedly at their home after traveling

over 1,000 miles. Their son had been dating her on-line for six months, but they knew nothing about her existence until that moment!

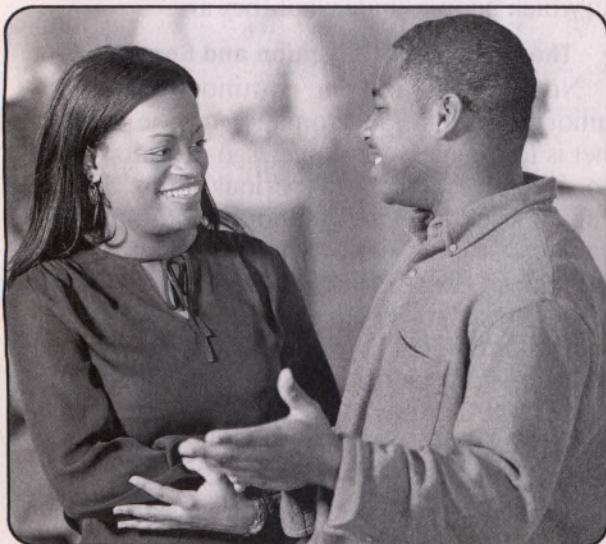
"How could this happen?" the parents asked. They thought, 'Our son could not possibly have fallen for someone whom he had never met in person.' In fact, their son had been deceiving them—in effect, hiding what he really was. Would you not agree that such deceptions are a poor foundation for a courtship?

### **Choosing the Real Over the Virtual**

Internet dating may present other dangers. In some cases, an on-line friend can become more real than the people whom you see each day. Family, friends, and responsibilities become secondary. A young woman named Monika, in Austria, says: "I started to neglect important relationships because I spent much time on the computer with people I met on-line." Troubled by this insight, she decided to quit using the Internet that way.

Of course, many are able to make balanced use of the Internet. Communication by E-mail can be a very helpful way to stay in touch with friends and loved ones. Surely you would agree, though, that nothing is quite the same as face-to-face contact. If you are "past the bloom of youth"—the time when sexual desires are at their peak—and are interested in marriage, you are facing one of the most important choices you will make in your life. (1 Corinthians 7:36) By all means, make a responsible decision.

The Bible advises: "Anyone inexperienced puts faith in every word, but the shrewd one considers his steps." (Proverbs 14:15) Rather than believing all that is written to you by someone you have never met, consider your steps carefully. It is far wiser to initiate meeting and making friends in person. Find out if you are truly compatible, especially when it comes to your spiritual goals and values. Such a courtship can lead to a truly happy marriage.



***When it comes to courtship, there is no substitute for meeting face-to-face***

BY AWAKE! WRITER IN SPAIN

# “HORSES DANCING IN THE WIND”



*“Who can watch your rhythmic steps, your pure, perfect clarity,  
your restraint, your sense of geometry, and feel no ecstasy?”*

—RAFAEL ALBERTI, SPANISH POET.

THE lights go off, and the music begins. At the rear of the arena, a rider appears on a white horse that dances in step with the music. The rider is then joined by a group of horsemen whose mounts wheel and turn in perfect harmony. The public holds its breath in amazement at seeing these handsome animals execute such graceful movements.

The Royal Andalusian School of Equestrian Art, in Jerez de la Frontera, Spain, has become world famous for its dancing horses. The show is really an equestrian ballet, featuring choreography based on the training

exercises of classical dressage and *doma vaquera*, or “country dressage.”\* The spectacle is further enhanced by traditional Spanish music and the riders’ 18th-century costumes.

### The Purebred Spanish Horse

The horses used in the show are purebred Spanish, also known as Andalusian horses. The Spanish horse is an ancient breed that lived thousands of years ago in the mountains

\* According to *The American Heritage Dictionary of the English Language*, “dressage” refers to “the guiding of a horse through a series of complex maneuvers by slight movements of the rider’s hands, legs, and weight.” *Doma vaquera*, or “country dressage,” refers to traditional equestrian exercises based largely on the work that horses have to perform on Spanish cattle ranches.

of the Iberian Peninsula. This breed was well-known to the Romans as a fine military horse.

The outstanding traits of the Andalusian horse are strength, agility, pride, and docility. Their value lies in their peculiar nature that is both fiery and tractable. Thanks to their strength and agility, these horses can perform very difficult steps and jumps. Nevertheless, to convert a noble beast into a graceful dancer is not an easy task.

### Training the Noble Beast

The Royal Andalusian School of Equestrian Art was founded by Álvaro Domecq in 1972. The school prepares horses by means of a careful gymnastic training that develops the animals' muscles. Eventually, they will be able to execute difficult dressage exercises in perfect harmony. This type of dressage is practiced at two renowned centers: the Spanish Riding School of Vienna in Austria and the Royal School in Spain. In both centers the spectacle enthralls visitors and impresses even the most demanding horse trainer.

The rider as well as the horse needs considerable training in order to achieve such excellence. Typically, both rider and horse will train together five days a week for seven hours a day over a period of four years. Training begins with the basic dressage in which the rider teaches the horse to walk forward at his command. After perfecting this preliminary step, the horse has to learn to lean backward as it moves, displacing its center of gravity toward the rear. This exercise enables the horse to concentrate its strength in its rear quarters, a technique that is necessary to perform the more difficult moves.

The movements, or airs, that the horse learns belong to two groups: the natural and the artificial. The first ones require the horse to improve its natural movements—the walk, the trot, and the gallop. The artificial airs developed by the Royal School require a very close bond between horse and rider. These movements involve great precision and

enormous physical strength.—See “The Basic Airs of an Equestrian Ballet.”

“To perform the difficult exercises of the Royal School, horse and rider have to have a very close relationship,” says José María Sánchez Cobos, director of the exhibition at the Royal School. “The Andalusian horse is considered one of the noblest of all the different races of horses, and some of these animals can truly become a close friend of the rider. Nevertheless, occasionally a certain horse and rider do not get along with each other, and a switch has to be made.”

When asked about the response of the horses to the music, José María explains: “The horses do not understand the music as we do, but evidently the music they hear in the exhibition does have an effect on them. They obviously react to the traditional music that forms an integral part of the show, and they seem to react to the applause of the public.”

The horses respond to the painstaking attention they receive at the school. They are carefully groomed for the exhibition, and they get showered every day after training to remove sweat and to refresh them. Since their skin is more sensitive than that of humans, it needs special attention.

“There is a Spanish saying,” adds José María, “that during the first 7 years, the horse is your friend's to train; from 7 to 14 years, it is yours to enjoy; and after 14 years, it is only fit for your enemy. But this is not strictly true at our school. One of our horses, Zamorano, was still performing at the age of 22.”

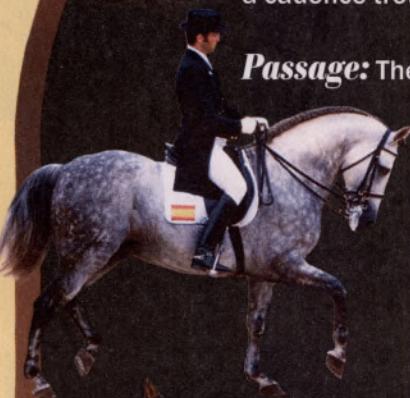
The end result of all this meticulous care and training is the exhibition in which the horses go through their paces. Here the public can see for themselves how horse and rider become an excellent team and how these graceful yet powerful mounts perform steps in tune with traditional Spanish music. Little wonder that Alberti, in the closing line of his poem quoted earlier, described these graceful animals as “horses dancing in the wind.”



## THE *Basic Airs* OF AN EQUESTRIAN BALLET

The term "airs" refers to the different movements the horses perform. The following are some principal airs.

**Piaffe:** The horse stands in one spot while performing a cadence trot, almost as if it were running in place.



**Passage:** The horse executes a slow trot while raising its hooves high above the ground, thereby giving the impression of dancing.



**Levade:** The horse raises its front legs high off the ground and maintains its position at a 45-degree angle to the floor. This requires great muscle control and perfect balance.



**Curvet:** The horse performs a series of jumps on its hind legs without its forelegs touching the ground.



**Capriole:** The horse leaps into the air, drawing its forelegs under its chest when reaching the highest point, while kicking out its hind legs.

## HORSES IN HARNESS



Another discipline included in the show is *enganche*, or couplings. The horses pull traditional carriages in perfectly synchronized movements. This also requires years of training. In their finest attire, the horses and riders constitute a spectacle that permits the audience to relive the time when horse and carriage was the principal mode of transport.

Piaffe, passage, and capriole: Fotografía cedida por la Real Escuela Andaluza; curvet, levade, and carriage: Fundación Real Escuela Andaluza del Arte Ecuestre



King Ashurbanipal of Assyria, whose library held cuneiform clay tablets, 650 B.C.E.

British Library, London, England



# LIBRARIES GATEWAYS TO KNOWLEDGE

BY AWAKE!  
WRITER IN  
AUSTRALIA

LIBRARIES have been termed "one of the pillars of civilization." The *World Book Encyclopedia* says that they are among the most important contributors to human culture and technology. The German poet Goethe called them the memory of mankind.

Which libraries have been among the most important "pillars of civilization"? Which book has had the greatest influence both on libraries and on the spread of literacy? And how many books do the largest of modern libraries hold? To answer the first question, let us step back in time and visit one of mankind's earliest libraries.

## An Ancient "Encyclopedia of Human Knowledge"

Picture yourself in the Middle Eastern country known today as Iraq. The year is 650 B.C.E. You are within the towering walls of the city of Nineveh (near modern-day Mosul). Looming

before you is the imperial palace of King Ashurbanipal—ruler of Assyria, Egypt, and Babylonia.\* While standing near the palace doors, you notice men carting heavy earthen jars into the building. These men have just returned from the extremities of the Assyrian kingdom and are attempting to gather every known work about the social,

\* Ashurbanipal, thought to be the Asenappar mentioned in the Bible at Ezra 4:10, was a contemporary of Judean King Manasseh.

Top left and bottom photos: Erich Lessing/  
Art Resource, NY; tablet: Photograph taken  
by courtesy of the British Museum

Library in a monastery,  
Switzerland, 1761



cultural, and religious traditions of the people living in Ashurbanipal's realm. Opening one of the jars, you notice that they are full of pillow-shaped clay tablets about three inches wide by four inches long.

You follow one of the men inside the palace, where you see scribes with bone styli making wedge-shaped impressions on small tablets of moist clay. They are translating foreign-language documents into Assyrian. Later, the tablets will be baked in an oven, making the records almost indestructible. The records are stored in rooms filled with shelves that are stacked with hundreds of jars. On the doorposts of the rooms, plaques state the subject of the records held in each location. The more than 20,000 clay tablets in this library contain information about business transactions, religious customs, law, history, medicine, and human and animal physiology, forming what a later scholar described as "an encyclopedia of human knowledge."

#### Before and After the Nineveh Library

Other great libraries existed before Ashurbanipal's library at Nineveh. King Hammurabi built a library in the Babylonian city of Borsippa a thousand years before Ashurbanipal. Rameses II founded a famous library in the Egyptian city of Thebes more than 700 years before Ashurbanipal. But the diversity of information and the sheer number of records earn Ashurbanipal's library the reputation of being "the greatest of the ancient world." It was 350 years before another library surpassed it.

That greater library was built by Ptolemy I Soter, one of Alexander the Great's generals, about the year 300 B.C.E. It was constructed in the Egyptian seaport city of Alexandria, and its librarians endeavored to collect copies of most of the writings in the inhabited world.\* According to tradition, it was at Alex-

andria that about 70 scholars started translating the Hebrew portion of the Scriptures into Greek. This translation came to be called the Greek *Septuagint* and was used extensively by early Christians.

#### Oriental Libraries

At the time that Ashurbanipal was improving his library, the Chou dynasty was ruling China. During the reign of this dynasty, from 1122 B.C.E. to 256 B.C.E., a group of books were produced that came to be known as the



Alexandrian library, Egypt, about 300 B.C.E.

Five Classics. They included a handbook for interpreting the future, a collection of speeches of early rulers, poetry, instructions for religious ceremonies and rituals, and a history of the state of Lu from about 722 B.C.E. to 481 B.C.E.—the last book being ascribed to the Chinese philosopher Confucius. The Five Classics and the numerous commentaries about them influenced Chinese thinking and formed the basis of both imperial and private libraries for more than two millennia.

\* For more information about both the ancient and the modern Alexandrian libraries, see the January 8, 2005, issue of *Awake!*



**The Librarian's Role** If you cannot find the book you need in the library's catalog, don't despair—ask the librarian. A librarian's expertise is often invaluable. Roderick, who has worked as a librarian for 20 years, says: "People often feel intimidated by libraries and librarians. They frequently start by saying, 'This may sound stupid, but . . .' Yet, there are no stupid questions. The skill of a good librarian is to find what you mean, not necessarily what you ask for."

In Japan, Hojo Sanetoki, a member of a ruling samurai family, founded a library in 1275 at his family home in Kanazawa (now part of Yokohama). He attempted to collect every existing book in Chinese and Japanese. Although diminished in content, this collection of books still exists today.

#### **The Bible, Monastery Libraries, and Western Culture**

"The power of the printed word, and the value of the library," says the book *A History of Libraries in the Western World*, "is nowhere better illustrated than in the rise, spread and durability of the Christian religion." What is the relationship between the development of libraries and the spread of Christianity?

After the Roman Empire disintegrated and the contents of its grand libraries were destroyed or dispersed, Christendom's monasteries emerged throughout Europe and gathered remnants of these ancient libraries. One key activity of many of these monasteries was the copying of Bible manuscripts as well as others by hand. The Benedictine monasteries, for example, lived by the "Rule of St. Benedict," which commanded the reading and copying of books.

Libraries in Constantinople stored and produced copies of ancient manuscripts that eventually reemerged in Italy. It is believed that these manuscripts played an important role in triggering the Renaissance. Historian Elmer D. Johnson says: "The role of the monastery library in the preservation of Western culture cannot be denied. For more or less a thousand years, it was the intellectual heart of Europe, and without it western civilization would have been a far different world."

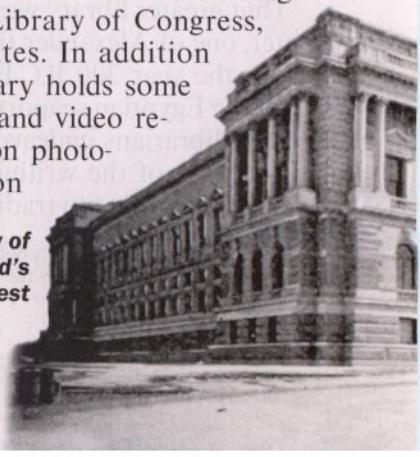
The work of copying the Bible helped to keep "the intellectual heart of Europe" beating during this period. And as the Reformation swept through Europe, the desire to read the Bible motivated ordinary men to cast off the shackles of illiteracy. The book *The Story of Libraries* says: "We find in the Protestant Reformation the beginnings of the idea that every member of society must have at least enough education to read the Bible. As theological controversy increased, the ability to read a broader range of religious writings became important. This required not only the knowledge of how to read, but physical access to the books as well."

The Bible thus played a key role in the spread both of libraries and of literacy throughout the Western world. Then with the invention of the printing press, huge private and national libraries containing books on a vast array of subjects emerged throughout Europe and, eventually, the rest of the world.

#### **Libraries of the 21st Century**

Today some libraries have grown to extraordinary size. Imagine standing next to a bookshelf that was 530 miles long and that contained over 29 million books. That is the approximate size of the world's largest library—the Library of Congress, in the United States. In addition to books, the library holds some 2.7 million audio and video recordings, 12 million photographs, 4.8 million

**U.S. Library of Congress, the world's largest**



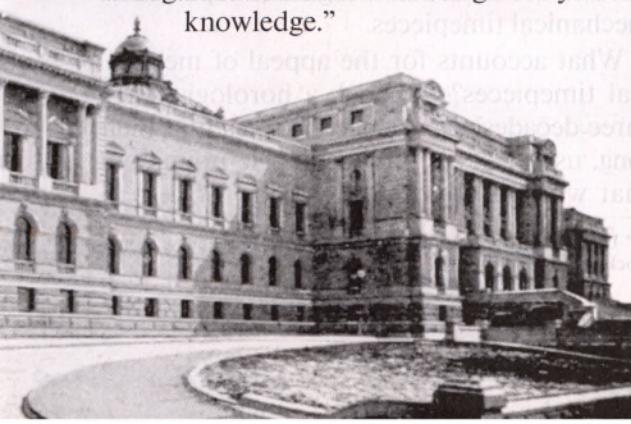
From the book Ridpath's History of the World (Vol. IX)

maps, and 57 million manuscripts. Each day, the library adds 7,000 items to its collection!

The British Library in London holds the second-largest number of books, more than 18 million of them. The Russian State Library in Moscow holds 17 million books and has a collection of some 632,000 annual sets of newspapers. The National Library of France, one of the oldest surviving national libraries in Europe, has 13 million books. In addition, the book *Library World Records* states: "The French national library was the first library to provide full-text access to a great deal of its collections via the Internet." For anyone with access to a computer, the Internet has provided unprecedented ease of access to mankind's storehouse of knowledge.

As never before, the quantity of information available to the public is exploding. It is estimated that the total stock of human knowledge is doubling every four and a half years. In the United States alone, over 150,000 new book titles are published each year.

Especially relevant today, then, is the observation of the ancient scholar, writer, and king—Solomon. He wrote: "To the making of many books there is no end, and much devotion to them is wearisome to the flesh." (Ecclesiastes 12:12) When used discerningly, though, libraries continue to be what the United Nations Educational, Scientific, and Cultural Organization calls a "local gateway to knowledge."



## What Do the Numbers Mean?

225.7

## The Dewey Decimal System

Many libraries use the Dewey decimal classification system, which appears as a series of numbers in their catalogs and on the spines of their books. Melvil Dewey, an influential American librarian, first published his system in 1876. It uses numbers from 000 to 999 to classify all materials by subject, organizing them into ten major groups:

- 000-099 General**
- 100-199 Philosophy and psychology**
- 200-299 Religion**
- 300-399 Social sciences**
- 400-499 Language**
- 500-599 Natural sciences and mathematics**
- 600-699 Technology (applied sciences)**
- 700-799 The arts**
- 800-899 Literature and rhetoric**
- 900-999 Geography and history**



Each major group is then divided into ten subgroups and assigned specific subjects within that group. For example, the Bible is given its own number within the 200 (Religion) classification—220. Specific subjects about the Bible are further divided. The number 225 identifies the "New Testament" (Greek Scriptures). Additional digits identify the type of book:

- 01 Philosophy and theory**
- 02 Miscellany**
- 03 Dictionaries, encyclopedias, concordances**
- 04 Special topics**
- 05 Serial publications**
- 06 Organizations and management**
- 07 Education, research, related topics**
- 08 Collections**
- 09 History of**

Therefore, an encyclopedia about the complete Bible would carry the number 220.3, while a commentary on the Greek Scriptures would carry the number 225.7.

The Library of Congress classification system is similar but uses a combination of letters and numbers. Most books also include an alphanumeric code identifying the author. In other lands different classification systems are used.



BY AWAKE! WRITER IN BRITAIN

# THE TIMEPIECE ON YOUR WRIST

**D**O YOU know what time it is? A mere glance at your wristwatch will tell you. But is your watch showing the correct time? We can easily take these timekeepers for granted, yet there is more to them than meets the eye.

Despite the immaterial and transient nature of time, man has always been interested in measuring it. The cycle of the seasons, the phases of the moon, the succession of day and night—all divide time naturally. But man has long striven to measure time in smaller amounts and with greater accuracy.

### The Science Behind the Machine

Horology—the science that involves the making of machines that indicate time—is among the oldest of the scientific crafts. The “heart” of these machines is the escapement. This regulates the rate at which the power driving the machine is released. When this power is allowed to escape only in small amounts and at regular intervals, periods of time can be measured. No one knows exactly when the first all-mechanical clock was invented, but a milestone was reached about the year 1500, when portable timepieces were first made.

The now common wristwatch is a relative newcomer. It became common in the late 1800's, particularly among women. During the first world war, artillery officers found that a watch worn on the wrist was more practical than one carried in a pocket. Thereafter, the popularity of wristwatches grew.

Nowadays, most watches are electronic and utilize quartz crystals. When specially shaped and placed in a suitable electronic cir-

cuit, a piece of quartz vibrates at a constant frequency, acting like a rapidly swinging pendulum.

It is extremely difficult to adjust mechanical or quartz watches to keep exact time. So no matter what watch you have, it will to some extent gain or lose time. Today, however, quartz watches are available that periodically correct themselves using time signals from atomic clocks.\* Advertisers claim that such radio-controlled watches are accurate to one second in a million years!

### Mechanical Timepieces Still Have Appeal

Considering such high precision and the fact that the escapement used in mechanical watches was invented more than two hundred years ago, you may feel that the mechanical timepiece is obsolete. After all, who would choose to use a mechanical calculating machine if an electronic calculator was readily available? Yet, a watch that ticks still holds a fascination for many. Each year millions are produced. The value of Swiss exports of mechanical watches has in recent years even exceeded that of their electronic counterparts. New, efficient, low-friction escapements have been developed, and people continue to seek out and use skilled horologists to repair their mechanical timepieces.

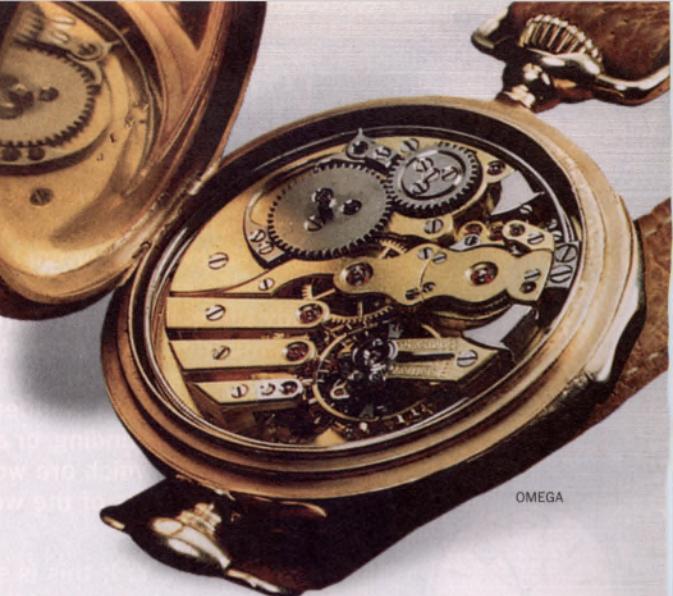
What accounts for the appeal of mechanical timepieces? Michael, a horologist with three decades' experience, believes that their long, useful life is one factor. He points out that while a quartz watch may work reli-

\* Using atomic vibrations as a standard of frequency, atomic clocks keep time with the utmost accuracy.

ably for some 15 years or so, a well-made mechanical watch can keep good time for more than 100 years. Such a watch, passed down from parent to child, can have great sentimental value.

For others the attraction of mechanical timepieces lies in the technical complexities and precision involved in displaying information about time and astronomy using minuscule gears and springs. Also, because these mechanisms can be made by hand, they can be understood and repaired by a dedicated enthusiast.

Unlike most machines, watches are expected to work day in and day out for years on end. What is more, wristwatches have to work at different temperatures and in every conceivable position, even when moving erratically, yet be exceptionally accurate. A watch that gains or loses no more than 20 seconds a day has an error of only 0.023 percent, the kind of accuracy normally expected of a carefully handled scientific instrument. No wonder many people appreciate the accumula-



OMEGA

tion of skill, ingenuity, and craftsmanship embodied in the mechanical wristwatch!

Of course, other factors come into play. Michael, referred to earlier, explains that some people simply wish to avoid the battery changes required by most quartz watches. So, what can help you decide which type of watch to wear?

## SOME NOTEWORTHY WRISTWATCHES

Second and fourth photos:  
Courtesy of Hamilton Watches

■ **1810-12** The first documented wristwatch, Abraham-Louis Breguet

■ **1945**

The date is displayed on the watch face, Rolex



■ **1957**

An electric-motor wristwatch, Hamilton Watch Company



■ **1960**

The time is kept through electronics, Bulova



■ **1972**

An all-electronic wristwatch with a digital display, Hamilton Watch Company





## WHICH IS BEST FOR YOU?

**TYPE:** A chronograph has counters to measure brief intervals of time, which is ideal if you want to time events. For engaging in sports, a water-resistant watch is advisable. If you have difficulty remembering to wind a watch, bear in mind that a quartz watch does not need winding. Neither do mechanical self-winding, or automatic, watches, which are wound by the movements of the wearer's arm.

**ACCURACY:** If this is something you value, you might consider a chronometer, a high-precision timepiece that meets well-established and official criteria of accuracy. Ultimately, quartz technology offers more precise timekeeping. A modern mechanical watch with a fast-beat movement that ticks 28,800 times each hour works at a frequency of four vibrations per second. Compare that with a standard quartz watch that

operates at between 10,000 and 100,000 vibrations per second!

**DISPLAY:** A digital watch uses numerals, or digits, to indicate the time; an analog display uses hands moving around a dial. Digital displays can present information, such as date, alarm, additional time zone, and chronograph. Analog displays present the time in a form easily and quickly absorbed, by just a glance at the angle of the hands.

**SERVICING:** Because a mechanical watch is driven by a powerful spring, it is less easily stopped by particles of dirt or dust than a quartz watch. Even so, for trouble-free timekeeping, mechanical watches need servicing more regularly than quartz. Having no moving parts, quartz watches with digital displays require no maintenance at all, other than battery changes.

### Which to Choose?

No doubt you primarily want a watch that has personal appeal. To many, that means a watch that is not only practical and functional but also aesthetic. In addition, Michael recommends that you give some thought to what you expect from a watch. Will you wear it all day every day or only on special occasions? Will it be subjected to knocks or extreme temperatures? Regular exposure to chemicals or seawater, for example, can damage some straps and cases. So it is wise to take these factors into account.

On the matter of cost, it is best to set a budget and stick to it. Generally, mechanical watches are more expensive than quartz. Keep in mind, though, that the same basic move-

ments are used in many different watches. The movement is that part of the watch, housed within the case, that actually gives the time. In the main, these are all well designed and constructed. Usually, prices vary because of the nonfunctional parts, such as the case or the bracelet. So a higher cost does not always mean greater accuracy or reliability.—See the box above.

With a watch on your wrist, it is easy to check the time without a moment's hesitation. Knowing something about the development of wristwatches can help you to appreciate these useful devices. After all, do you not find that you feel lost without your watch?

By *Awake!* writer  
in Hawaii

# Kona Coffee

## A Gourmet's Delight

**V**ISITORS to the Kona district of the Big Island of Hawaii have the opportunity to sample some of the finest coffee in the world—Kona coffee, widely regarded as a gourmet's delight!

In the mauka (mountain) region, where the narrow roads are twisty and winding, acre after acre of coffee plants cover the slopes. Bright, shiny leaves delight the eye, and at certain times of the year, brilliant, dainty white blossoms perfume the air. These ultimately develop into coffee berries, or cherries, as the coffee farmers and processors call them.

Large and small family farms exist side by side—over 600 of them—and some have been handed down from parents to children for generations! The Big Island coffee belt is an extensive one, approximately a mile wide and some 30 miles long. It is located on the slopes of two ancient volcanoes, Hualalai and Mauna Loa. Coffee grows best at elevations between 500 and 2,500 feet.

Renowned resort areas, supermarkets, small country stores, and rustic roadside cafés in Hawaii all feature the delightful brew made from this fine coffee. Experienced coffee drinkers treasure it for its rich aroma and lively yet smooth taste. But how did coffee growing become established in this onetime monarchy, and how did it develop into a multimillion-dollar industry?

Francisco de Paula Marín, a physician and aide to King Kamehameha I, is generally credited with first importing and planting coffee on the island of Oahu in 1813. Subsequently, about 1828, cuttings from plants on Oahu were introduced to the Kona district of the Big Island.

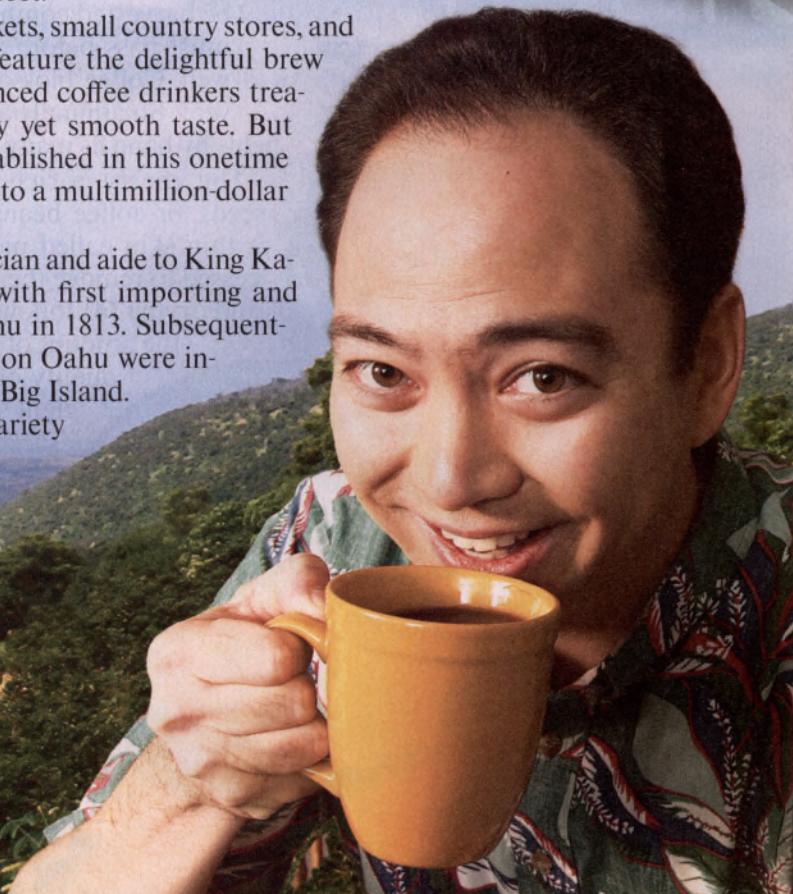
These cuttings were a strain of the variety

**Kona ➤**

**Coffee plant  
blossoms**



**Kona district**

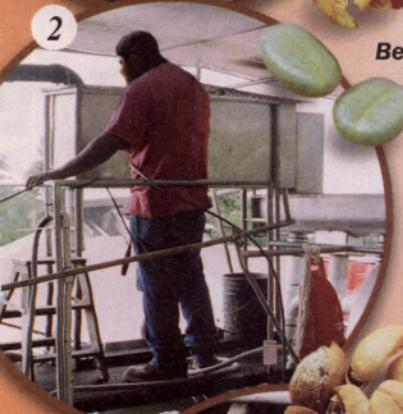


### Cherry

1



2



Beans

Parchment removed

3



4



of coffee known as arabica, which is still the variety produced in Kona. By the 1830's, coffee had become well established in Kona and was being marketed commercially.

### Why Coffee Thrives in the Kona District

Although classified botanically as a bush or a shrub, the coffee plant (1) may grow to as much as 30 feet in height. Thus, many refer to it as a tree. Geographically, the Kona district presents ideal conditions for the growth of coffee. This is because the trade winds blow from the east side of the island. Hitting the eastern slope of Mauna Loa, which rises to over 13,000 feet, the winds become gentle breezes. These then blow over the mountain to Kona gently enough that the delicate coffee blossoms are not disturbed.

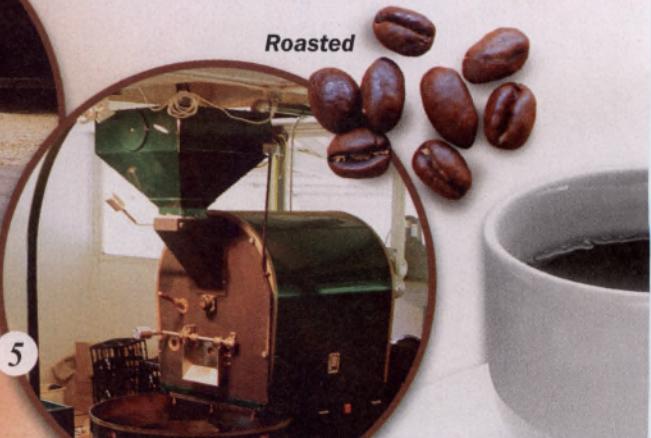
The sun shines plentifully on the Kona slopes, and frequently during the afternoon, cloud cover moves in to provide shade and protection from too much sun. These clouds then assist further by gently dropping enough moisture in the afternoon to water the coffee plants abundantly. Since the temperatures are mild year-round, there is no danger of frost.

### Harvesting and Processing the Crop

How long does it take from planting till the coffee may be harvested commercially? Usually at least three years must pass before a coffee tree begins to start bearing well. Coffee blossoms appear several times during the year. So annually a typical coffee farmer must pick the fields by hand as many as eight times!

The cherry, a rich-red pulpy fruit, usually holds two seeds, or coffee beans. Since the beans are covered with a thin skin called parchment, the cherries must be processed to remove the pulp and parchment (2). Soaking (3) and drying (4) follow, and the processing greatly reduces the amount of the final product. Depending on the quality of the coffee, it may take as much as eight sacks of cherries to produce just one sack of roasted coffee.

5



Roasting (5) the coffee beans is in itself quite an art, requiring not only good quality equipment but also considerable personal skill. How long the coffee is roasted depends on a variety of factors, such as moisture, weight, grade, quality of the beans, desired darkness of the beans, and weather conditions.

Many of the Big Island's coffee farms and mills utilize modern marketing techniques. They invite the public to tour the farm, watch the processing, and taste Kona coffee. Colorful road signs and picturesque old coffee mill sites still abound, along with quaint cafés and hotels from a bygone era. All, of course, feature Kona coffee!

The docile donkeys, known as Kona nightingales for their loud braying, were once used to transport the coffee bags. They were supplanted by the military jeep, which also eventually faded away. But remnants of both still exist—the donkeys live in the wild and are protected, and the jeeps still sit in growers' backyards, quietly rusting away.

#### **Developing the Gourmet Market**

For many years Kona coffee was used extensively for blending with lesser coffee varieties, and it was marketed that way. However, in the mid-1950's, a significant change occurred. World coffee prices were up, and the yields per acre of Kona coffee were quite high. Farmers were encouraged through meetings with the University of Hawaii Extension Service to grow more coffee, and information on coffee growing was exchanged between farmers, processors, researchers, and extension agents.

The results were gratifying. Since 1970, Kona coffee has gradually shifted from being used primarily for blending with lesser coffees to being a specialty gourmet item marketed not only domestically but also internationally. This has brought higher and higher prices. International com-

modity agreements have also helped, by keeping coffee prices fairly stable and preventing extreme variations in price. Protection of the label "Kona Coffee" helped in marketing the product, and now many coffee farmers profitably market their coffee on-line.

#### **Kona Coffee Festival**

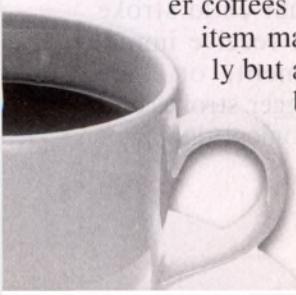
Yearly now, the Kona Coffee Cultural Festival invites one and all to join in a grand coffee festival. There are recipe contests, a golf tournament, and numerous other events. A prominent feature of the festival is the coffee cupping competition, in which the brew is tasted and judged by experts. Competition is keen, for the coveted awards can mean greatly increased sales for the winners.

Here are the suggestions from the festival for making "a perfect cup of Kona coffee": "The best brewing method is an automatic drip system with a paper filter. Use fresh, cold water. Add one tablespoon of Kona Coffee per 6 oz. of water. For peak flavor, keep the brewed coffee warm and consume within one hour."

Will you try it? If so, you will be drinking what many feel is some of the finest coffee in the world—Kona coffee—truly a gourmet's delight!

### **In Our Next Issue**

- Skin Cancer—How to Protect Yourself
- Is It Wrong to Be Ambitious?
- A Clean Home—The Part We All Play



# Watching the World

## "Cyberbullying"?

Cell phones and the Internet are a social lifeline for many young people. "They can also be their social death," says Canada's *Maclean's* magazine, since "cyberbullies" can use E-mail, instant messaging, and cell-phone text messaging to torment victims. "A quarter of young Canadian Internet users report having received material that said hateful things about others," says *Maclean's*. Such electronic bullying has moved police to issue remind-



ers that written death threats are a crime.

*Maclean's* advises parents to talk to their children about the people and places they visit on-line and to put computers in an open area of the home where it is easy to monitor what children are reading and sending. The report warns children never to respond to a bully's message and never to "give out their log-in codes or passwords to others, even their best buddies," in order to prevent their private information from being passed on to others.

## Marriage Scam

More than 3,000 South African women have been tricked into getting "married," reports the *Sowetan* newspaper of Johannesburg. In one scam, women sign what they think is a job contract, but they are actually signing a marriage certificate. The certificate qualifies the foreign "bridegroom" for permanent residence in the country. The "bride" may discover the deceit only when she applies to replace lost identification documents and finds she has been given a different surname or when she goes to register her marriage on her real wedding day and learns that she is listed as already married! Getting the "marriage" annulled can be complicated. Still, about

2,000 of the women have successfully canceled their unwitting marriages. To fight the scam, a new law requires foreign spouses to wait five years before applying for permanent residency.

## Rare Archaeological Find

Archaeologists investigating caves near the Dead Sea have turned up jewelry and other items said to date back 2,500 years, to the period when the Jews returned to their homeland from exile in Babylon. The archaeologists, from Hebrew University in Jerusalem and Bar Ilan University in Ramat Gan, located the items with the use of metal detectors. Among the treasures were a small bronze mirror, a silver pendant, a necklace of gold and semiprecious stone beads, a

Babylonian agate medallion, and a stamp depicting a Babylonian priest bowing to the moon, reports the Associated Press. "This find is very rare. Both for the richness of the find and for that period, it is almost unheard of," said Tsvika Tsuk, chief archaeologist for the Israel Nature and National Parks Protection Authority.

## Children Can Suffer Stroke

"At least one child every day in Canada suffers a stroke," reports the *Vancouver Sun* newspaper. Neurologist Gabrielle deVeber, director of the Canadian Pediatric Ischemic Stroke Registry, says that child stroke victims must receive immediate treatment, or they will have "bigger strokes and more neurological damage."

According to the newspaper, "clot-busters must be administered within three hours of the onset of stroke." But childhood strokes "are often misdiagnosed as seizures or migraines." The paper notes that symptoms indicating stroke "include numbness or weakness, particularly on one side of the body, confusion, impaired speech, loss of vision, dizziness and sudden, severe headache." Youthful strokes can be triggered by certain treatments for heart disease and cancer, and some experts suspect that "child obesity and diets high in fats" may also be risk factors.

### Contaminated Diet

According to a study by the environmental organization Toxics Link, South Asians are ingesting dangerous pollutants along with their regular diet, reports India's newspaper *The Hindu*. The study found banned or regulated

substances in basic foodstuffs such as meat, spices, and oil. Persistent organic pollutants such as polychlorinated biphenyls (PCBs) have found their way into the environment "possibly through indiscriminate disposal of old transformers and capacitors imported before the ban" of PCBs or because they are released at ship-breaking yards, says the report. Other studies discovered DDT in vegetables and dried fish. Despite international treaties aimed at controlling such hazards, "breast milk, fat samples and human blood samples show high level of contamination due to DDT, HCB, Aldrin, Dieldrin, [Dioxin], Furans and PCBs," states the report.

### Societies Transformed by Guns

"The proliferation of weaponry, in particular small arms, is so widespread that it is responsible for the death of

one person every minute and more than 500,000 killings a year [worldwide]," reveals London's newspaper *The Independent*. "In 2001, 16 billion units of military ammunition were made, enough to shoot everyone in the world twice." Nearly eight million firearms are manufactured annually, the majority for civilian use. As the study by Amnesty International, Oxfam, and the International Action Network on Small Arms points out, "societies that were once largely peaceful, with any scores being settled with fists or knives, have been transformed by guns." In one country, assault rifles are used as currency. In another, an English teacher who gave lessons to an elderly woman was paid in hand grenades. And in a third country, "babies are named 'Uzi' and 'AK' after their fathers' favourite assault rifles," the paper said.

### More Cars—More Challenges

"China is progressing from a kingdom of bicycles towards an automobile society," states the newspaper *China Daily*. Presently, there are 20 vehicles for every 1,000 people in China, compared with a worldwide ratio of 120 to 1,000. The number of vehicles in China is predicted to increase dramatically. Chen Qing-tai, deputy director of the Development Research Centre of the State Council,

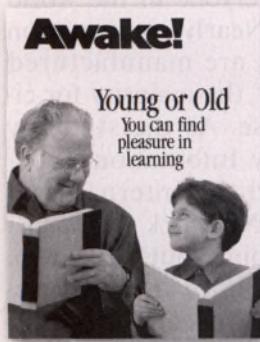
believes that increased vehicle ownership will improve many people's lives. But Chen also foresees challenges: "Pollution in cities will mainly be generated by automobiles, instead of coal, if we cannot effectively control auto exhaust emission." In some Chinese cities, vehicles are already the biggest emitters of carbon monoxide and nitrogen oxide. Efforts are being made to reduce pollution before the 2008 Olympic Games in Beijing.



# From Our Readers

**Learning** I am a teacher, and I have just finished reading the cover series "Young or Old—You Can Find Pleasure in Learning." (August 8, 2004) I often ask myself how you are able to write articles that are so concise, so clear, and so practical. I truly appreciate the enthusiasm with which you encourage people of all ages to learn.

*F. S., Italy*



When I was halfway through high school, I became so unhappy that my parents allowed me to learn on my own by means of home schooling. I am now 20 years old, and I'm happy that I enjoy learning again. Reading this series was a reminder that all people can love learning regardless of their circumstances.

*N. G., United States*

I am having difficulty with my oldest son, who is seven years old. He just can't seem to enjoy reading books, doing schoolwork, and learning at Christian meetings. I intend to apply the advice in this series.

*M. O., Japan*

One of the recommendations in the article was to do brief reviews after studying, since it is common to forget things that were just learned. My wife and I are learning Hindi to help us in our ministry with the Indian community. I find it beneficial to write new words on a piece of paper. Afterward, whenever I have a free moment, I look at those words. This helps to impress on my mind what I have just studied.

*E. T., United States*

I am 56 years old, and a sign-language group was established in our congregation. Although my ability is limited, I joined the group because I wanted to help. Just when I was worrying about whether I would really be able to do this, I read this series. The information under the subheading "You Are Never Too Old to Learn" and the final article really encouraged

me. I regained the courage to proceed at my own pace and continue with the sign-language group.

*R. N., Japan*

**Glossies** I want to let you know how thought provoking I found the article "Glossy Magazines—'Pick Me Up and Buy Me'" (August 8, 2004) I never realized how those magazines could affect someone. I enjoyed the point that "artificial intimacy"—knowing a face without ever having met its owner—can stir the emotions of people over the death of someone they have never met. I was the victim of this once! My daughter is now interested in certain magazines. She and I will discuss this article together.

*S. M., United States*

**Appearance** I want to thank you for the article "When Concern About Appearance Becomes an Obsession." (July 22, 2004) It seemed as if it were written just for me. I am 19 years old, and unfortunately, I have suffered from eating disorders for some time. It is not easy to cure this illness. Thank you for articles that deal with subjects like these. They allow me to think seriously on the matter, and I hope that they will help me to solve my problem.

*G. L., Italy*

**Crosswords** Thank you for the nice crossword puzzles. They help me to get to know Jehovah God and the Bible better. I am nine years old.

*I. C., Germany*

**"Awake!" responds:** The Bible quiz "Do You Know?" appears in certain language editions of "Awake!" that do not contain a crossword puzzle.

# How Can the Sun Shine at Midnight?

Time-lapse photo of midnight sun

© Paul Souders/WorldFoto

**H**OW can the sun never set?" As a Finnish missionary serving in Papua New Guinea, I often heard questions like that one. In the Tropics the number of daylight hours changes little from month to month. So the idea that in the Arctic the sun does not set for months is hard for residents of the Tropics to imagine. And when I tried to explain that in winter the sun never rises, many were even more puzzled.

How, then, does the sun shine at midnight? This remarkable phenomenon has to do with the fact that in the earth's annual trip around the sun, earth's rotational axis remains tilted 23.5 degrees away from vertical. Thus, during summer in the Northern Hemisphere, the North Pole is tipped toward the sun, while in winter it is tipped away from it. Since the earth rotates on its axis once a day, at the Arctic Circle on one night a year—about June 21—the sun does not set. Likewise, on one day a year—about December 21—the sun does not rise, though at noon the landscape may be bathed in predawn twilight.

In fact, the farther north you go above the Arctic Circle, the more summer nights will be graced by the midnight sun and the more win-

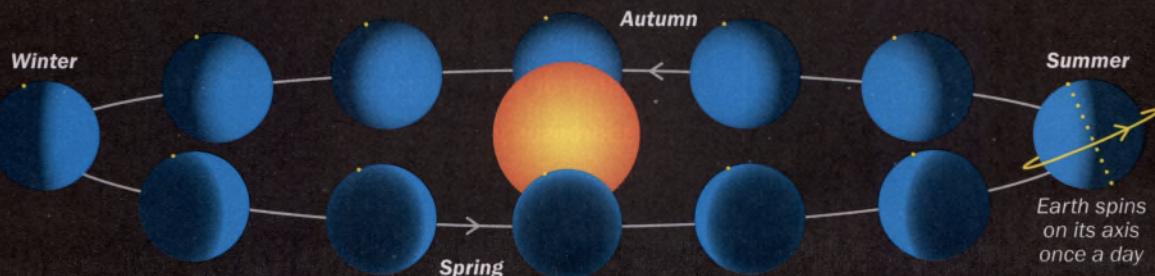
ter days will be sunless. At the poles, day and night both last for six months.\*

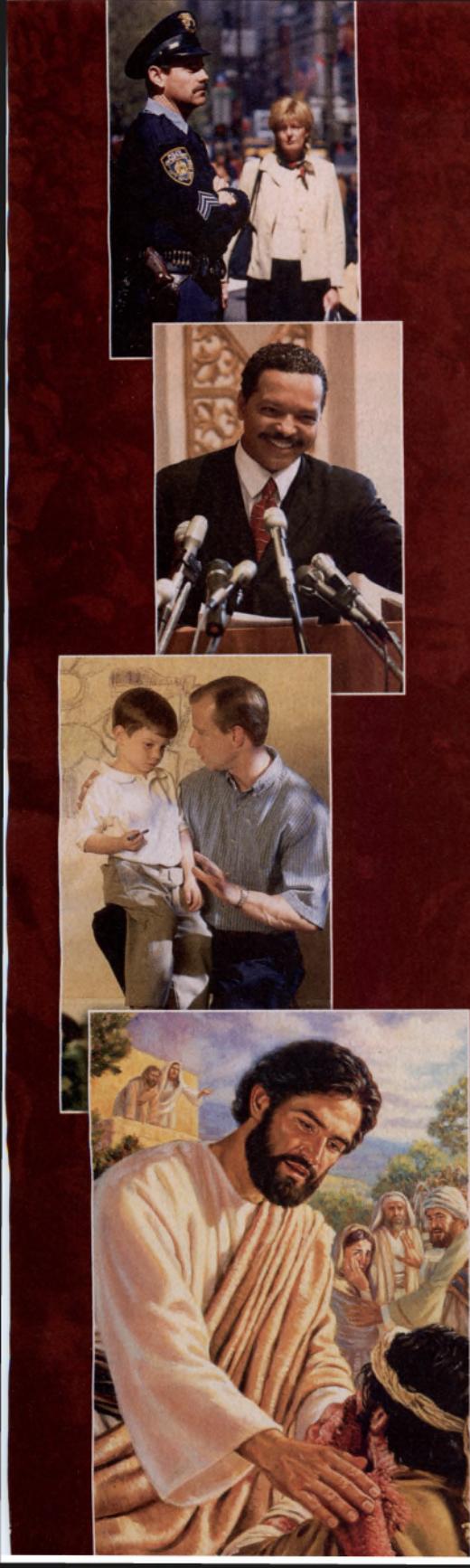
How do the inhabitants of polar regions sleep in the summer, and how do they cope with the long winter nights? In the past in some cultures, people slept more than twice as many hours a night during the winter as they did during the summer. Adopting a more modern way of life has reduced that difference for many. But the long days of summer still imbue dwellers of the Northland with added energy. "When it is broad daylight at 11:00 p.m., I just don't feel like going to bed," says Patrick, who lives in Alaska. "Sometimes I go out and cut the grass or perform some other task."

On the other hand, months of daylight or darkness can be wearing—physically and psychologically. Thus, some people try to block the light from entering their bedroom in the summer and expose themselves to bright lights in the winter, all in an effort to balance out their sleep mechanisms and ward off exhaustion and depression. Despite the challenges, however, residents and visitors agree that experiencing the midnight sun is unforgettable.—Contributed.

\* The Antarctic experiences these same phenomena, but the Antarctic has summer when the Arctic has winter.

**Earth's tilted axis puts the poles in constant sunlight in summer and constant darkness in winter** (Example shown is for the Northern Hemisphere)





COME, HEAR THE  
PUBLIC DISCOURSE

# “TO WHOM DOES OUR OBEDIENCE BELONG?”

The very notion of obedience is distasteful to many people. ‘I want to be free to do as I please’ is a common view. The fact is, though, that all of us value obedience in our everyday life. Each time you heed a warning sign or follow instructions, you are showing a measure of obedience. And who can rightly deny that obedience to the laws of secular authorities is needed to maintain order and peace in human society? Why, just imagine what would happen if all people refused to obey traffic laws!

However, when humans exercise authority over other humans, the results are not always positive. A long time ago, the Bible noted that “man has dominated man to his injury.” (Ecclesiastes 8:9) Is there a ruler who is worthy of our trust and obedience? If so, how can we identify him? And what can we expect under his rule? These questions will be answered in the stirring public discourse “To Whom Does Our Obedience Belong?” This address will be delivered at the district conventions of Jehovah’s Witnesses beginning this month. Hundreds of such conventions will be held around the world. To find the location nearest you, contact Jehovah’s Witnesses in your area or write to the publishers of this magazine at the addresses given on page 5.