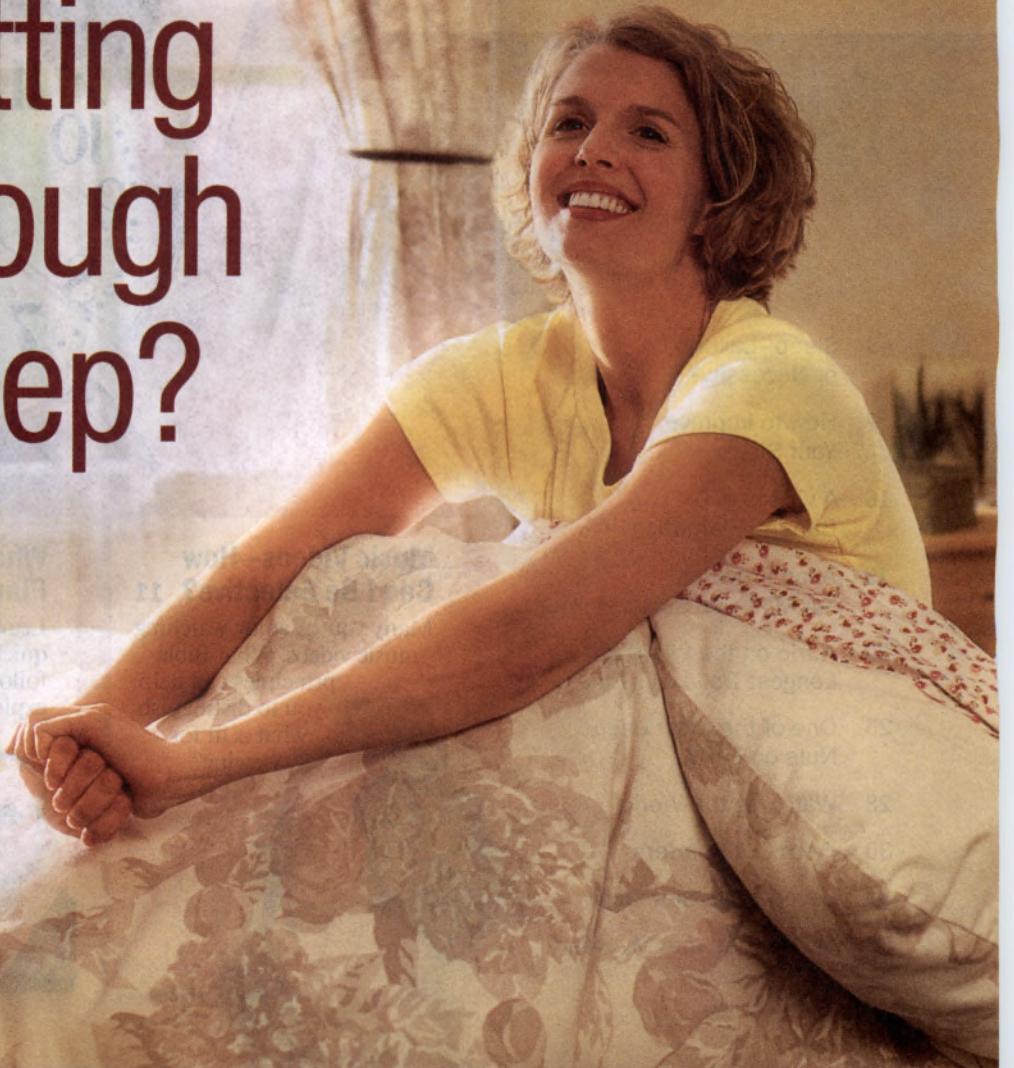


Awake!

MARCH 22, 2003

Are You Getting Enough Sleep?



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How much sleep should you get?
And is there anything you can do
to improve your sleeping habits?

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SLEEP

Luxury or Necessity?

TO SOME PEOPLE, sleep is a waste of time. Preferring a very busy daily schedule of business and social engagements, they only surrender to sleep when extremely tired. In contrast, others, enduring night after night of tossing and turning until the early hours of the morning, would give anything for a good night's sleep.

Why do some find it so hard to sleep, while others are desperate to stay awake? Should we view sleep as a luxury or a necessity? To answer these questions, we need to understand what is going on while we are asleep.

The Mysteries of Falling Asleep

Exactly what makes a person lose consciousness and fall asleep remains a mystery. Researchers, however, have established that sleep is a complex process regulated by the brain and that it obeys a 24-hour biological clock.

As we get older, our sleeping habits change. A newborn sleeps for frequent short periods that total about 18 hours a day. According to sleep specialists, although some adults appear to need only three hours of sleep a day, others need up to ten hours.



Recent research has shown that variations in our biological clock also explain why some teenagers struggle to get out of bed in the morning. The biological clock seems to shift forward during puberty, making youngsters want to go to sleep later and wake up later. This sleep delay is common and tends to disappear in the mid-to-late teens.

Our biological clock is regulated by chemical substances, many of which have already been identified. One of them is melatonin, a hormone thought to trigger sleepiness. Melatonin is produced in the brain, and some scientists believe that it is responsible for the slowdown of the body's metabolism that occurs prior to falling asleep. As melatonin is released, body temperature and blood flow to the brain are reduced, and our muscles gradually lose their tone and become flaccid. What happens next as the person descends into the mysterious world of sleep?

Sufficient sleep is vital for a healthy body and mind

'Nature's Chief Nourisher'

Approximately two hours after we fall asleep, our eyes begin to quiver quickly back and forth. The observation of this phenomenon led scientists to divide sleep into two basic phases: REM (rapid eye movement) sleep and non-REM sleep. Non-REM sleep can be subdivided into four stages of progressively deeper sleep. During a healthy night's sleep, REM sleep occurs several times, alternating with non-REM sleep.

Most dreaming occurs during REM sleep. The body also experiences maximum muscle relaxation, which allows the sleeper to wake up feeling physically refreshed. In addition, some researchers believe that newly acquired information is consolidated as part of our long-term memory during this sleep stage.

During deep sleep (non-REM sleep stages 3 and 4), our blood pressure and heart rate reach lower ranges, providing rest for the



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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circulatory system and helping to ward off cardiovascular disease. In addition, the production of growth hormone peaks during non-REM sleep, with some teenagers producing as much as 50 times more growth hormone at night than during the day.

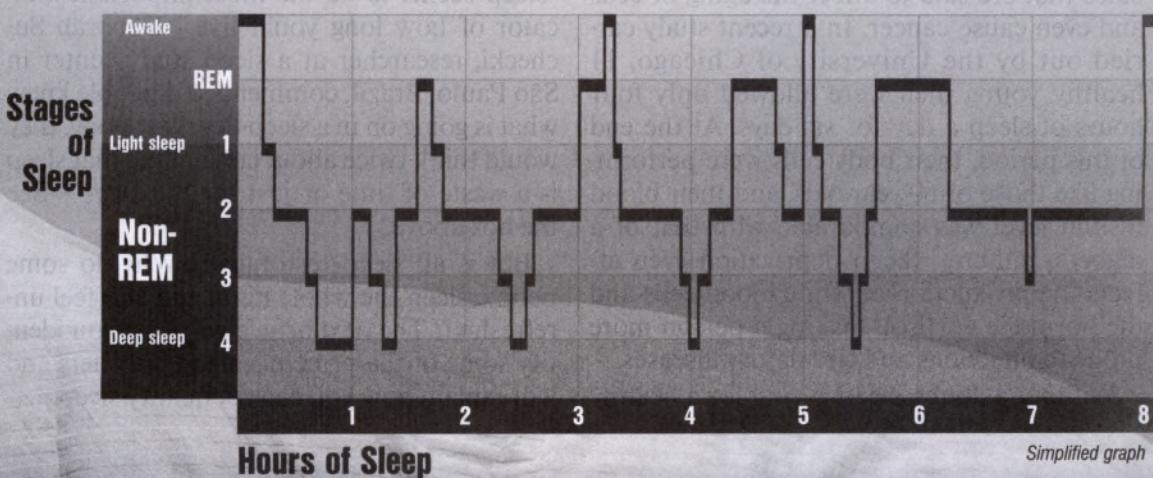
Sleep also seems to affect our appetite. Scientists have discovered that sleep really is, to quote Shakespeare, "chief nourisher in life's feast." Our brain interprets a lack of sleep as a lack of food. While we sleep, our organism secretes leptin, the hormone that normally lets our body know that we have eaten enough. When we stay awake longer than we should, our body produces less leptin, and we feel a craving for more carbohydrates. So sleep



The production of growth hormone peaks during sleep

deprivation can lead to increased carbohydrate consumption, which in turn can lead to obesity.—See the box "An Afternoon Nap," on page 6.

THE STAGES OF SLEEP



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THE EFFECTS OF SLEEP DEPRIVATION

SHORT-TERM EFFECTS

- Drowsiness
- Sudden mood swings
- Loss of short-term memory
- Loss of capacity to create, plan, and carry out activities
- Loss of concentration

LONG-TERM EFFECTS

- Obesity
- Premature aging
- Fatigue
- Increased risk of infections, diabetes, cardiovascular diseases, and gastrointestinal disease
- Chronic memory loss

Vital for Health

But that is not all. Sleep makes it easier for our body to metabolize free radicals—molecules that are said to affect the aging of cells and even cause cancer. In a recent study carried out by the University of Chicago, 11 healthy young men were allowed only four hours of sleep a day for six days. At the end of this period, their body cells were performing like those of 60-year-olds, and their blood insulin level was comparable with that of a diabetes sufferer! Sleep deprivation even affects the production of white blood cells and the hormone cortisol, making a person more prone to infections and circulatory diseases.

Without a doubt, sleep is vital for a healthy

body and mind. In the opinion of researcher William Dement, founder of the first sleep study center, at Stanford University, U.S.A., "sleep seems to be the most important indicator of how long you'll live." Deborah Suchecki, researcher at a sleep study center in São Paulo, Brazil, comments: "If people knew what is going on in a sleep-deprived body, they would think twice about concluding that sleep is a waste of time or just for the lazy."—See the box above.

But is all sleep restorative? Why do some people sleep the whole night and still feel unrefreshed? The next article will help you identify some of the principal sleep disorders and will explain how you can get quality sleep.

AN AFTERNOON NAP

Have you ever felt an uncontrollable drowsiness after lunch? This is not necessarily a sign that you are suffering from sleep deprivation. It is normal to feel sleepy in the early afternoon because of a natural drop in body temperature. In addition, scientists have recently discovered a protein called hypocretin, or orexin, that is produced in the brain and helps keep us awake. What is the connection between hypocretin and food?

When we eat, the body produces leptin to give us the impression that we are full. But leptin inhibits the production of hypocretin. In other words, the more leptin there is in the brain, the less hypocretin and the greater the feeling of drowsiness. Perhaps that is why in some countries people take a siesta—a break in the workday that allows people to sleep a little after lunch.

How to Improve YOUR SLEEP

SLEEP PROBLEMS are nothing new. As early as the fifth century B.C.E., a servant at the court of Persian King Ahasuerus recorded that one night "the king's sleep fled."—Esther 6:1.

Today millions of people have difficulty sleeping well. According to Brazilian sleep specialist Rubens Reimão, an estimated 35 percent of the world's population suffer from insomnia.* Dr. David Rapoport of the New York University Sleep Disorders Center described sleeping badly as "one of the most serious epidemics of the turn of the century."

* Insomnia is the inability to enjoy normal and sufficient sleep.

To make matters worse, many insomniacs suffer in ignorance. According to researchers at the Federal University of São Paulo, Brazil, as few as 3 percent of sufferers are correctly diagnosed. Many simply accept sleeping badly as part of life and resign themselves to spending their waking hours feeling irritated and drowsy.

Nighttime Drama

Tossing and turning for hours, with your eyes wide open, while everyone else is sleeping peacefully is a most undesirable experience. Still, sporadic insomnia lasting a few days is not uncommon, and it is generally related to stress and the ups and downs of life. When

Sleep deprivation can be dangerous



THE PRINCIPAL CAUSES OF INSOMNIA

■ **MEDICAL:** Alzheimer's disease; apnea, closure of the upper air passage during sleep; restless legs syndrome; Parkinson's disease; periodic limb movement disorder, movements accompanied by periods of awakening; asthma; heart and digestive diseases

■ **PSYCHIATRIC:** depression, anxiety, panic, obsessive-compulsive disorder, post-traumatic stress disorder

■ **ENVIRONMENTAL:** light, noise, heat, cold, uncomfortable mattress, restless mate

■ **OTHER CAUSES:** alcohol and drug abuse, side effects of some drugs

insomnia becomes chronic, however, emotional or clinical disorders may be involved, and it is important to seek medical help.—See the box above.

Could you be suffering from a sleep disorder? If after filling out the questionnaire on page 9, you conclude that you do have sleep problems, there is no need to despair. Recognizing the need for help is half the battle of curing a sleep disorder. According to Brazilian neurologist Geraldo Rizzo, 90 percent of insomnia sufferers can be treated successfully.

However, for appropriate treatment to be given, it is important to know exactly what is causing the insomnia. A medical examina-

tion called a polysomnogram has contributed to the diagnosis and treatment of many sleep disorders.—See the box below.

One of the most common causes of chronic insomnia among adults is related to snoring. If you have ever slept near someone who snores, you know that this can be extremely uncomfortable. Snoring can be a symptom of obstructive sleep apnea syndrome (OSAS), in which the closure of the throat temporarily prevents a sleeper from sucking air into his lungs. Initial steps in treating OSAS include weight loss, avoidance of alcoholic beverages, and avoidance of muscle-relaxant drugs. Specialists may also prescribe specific medication

DIAGNOSING SLEEP DISORDERS

A polysomnogram is a group of tests performed to map sleep while the patient is sleeping under the most normal conditions possible. The following are the basic elements necessary for an evaluation.

■ **Electroencephalogram**—The tracing of electrical activity in the brain, used to classify and quantify the various stages of sleep.

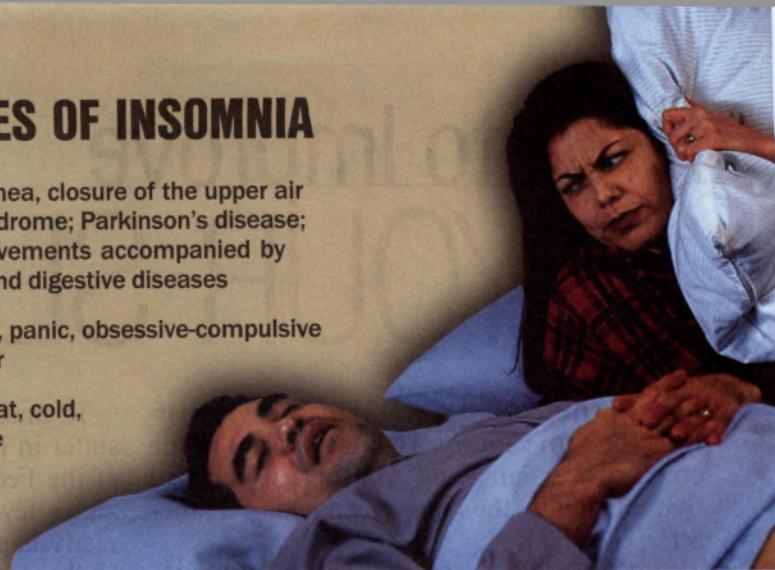
■ **Electrooculogram**—Records eye movements observed during REM sleep.

■ **Electromyogram**—Used to monitor the tonus of chin and leg muscles during REM sleep.

■ **Electrocardiogram**—Used to monitor heartbeat throughout the night.

■ **Respiratory airflow and movements**—Measured by recording the flux of air through the nose and the mouth as well as the movement of the abdomen and the thorax.

■ **Oxyhemoglobin saturation**—Measurement of the level of oxygen in the blood vessels determined by means of a device called an oximeter, attached to the patient's finger.



or the use of dental appliances or a continuous positive airway pressure machine.*

In more severe cases, surgical correction of the throat, jaw, tongue, or nose may be necessary in order to make it easier for air to enter and leave during the breathing process.

Children can also suffer from insomnia. The signs of sleep deprivation may appear at school—poor scholastic achievement, irritation, lack of concentration—perhaps leading to a wrong diagnosis of hyperactivity.

Some children fight sleep, preferring to sing, talk, or listen to someone telling stories—anything instead of going to bed. This may just be a ruse to get parental attention. In some cases, however, a child may be afraid to sleep because of frequent nightmares related to horror movies, violent news programs, or quarreling in the home. By promoting a peaceful and loving atmosphere at home, parents can help to avoid these problems. Obviously, medical advice should be sought if symptoms persist. Without a doubt, a good night's sleep is as important for children as it is for adults.

How to Get a Good Night's Sleep

For many centuries it has been known that a good night's sleep does not happen by chance. Sleeping well depends on a series of factors beyond just controlling anxiety and stress. These are known collectively as sleep hygiene.

Effective sleep hygiene amounts to a way of life. It includes getting regular exercise at the right time of the day. Exercise during the morning or afternoon can help one to be drowsy at bedtime. But working out close to bedtime can interfere with sleep.

Exciting films or engrossing reading material can also have a stimulating effect. Before going to bed, it may be better to read

* The patient sleeps with a small face mask that receives an airflow from a compressor via a flexible hose. This airflow keeps breathing passages open and allows the patient to breathe normally.

SLEEPINESS TEST

How likely are you to doze off in the situations mentioned below? Using the following scale, circle your answers, and then add up your total score.

- 0 Would never doze
- 1 Slight chance of dozing
- 2 Moderate chance of dozing
- 3 High chance of dozing

a Sitting and reading

- 0
- 1
- 2
- 3

b Watching TV

- 0
- 1
- 2
- 3

c Sitting inactive in a public place, such as at the theater or a meeting

- 0
- 1
- 2
- 3

d As a car passenger for an hour without a break

- 0
- 1
- 2
- 3

e Sitting quietly after a lunch without alcohol

- 0
- 1
- 2
- 3

f Lying down to rest in the afternoon

- 0
- 1
- 2
- 3

g Sitting and talking to someone

- 0
- 1
- 2
- 3

h In a car, while stopped in traffic

- 0
- 1
- 2
- 3

Score _____

Score Results

1-6: No need to worry

7-8: Within the average

9 and over: Seek medical advice

Based on The Epworth Sleepiness Scale, by Stanford University, California, U.S.A.

something relaxing, listen to soothing music, or take a warm bath.

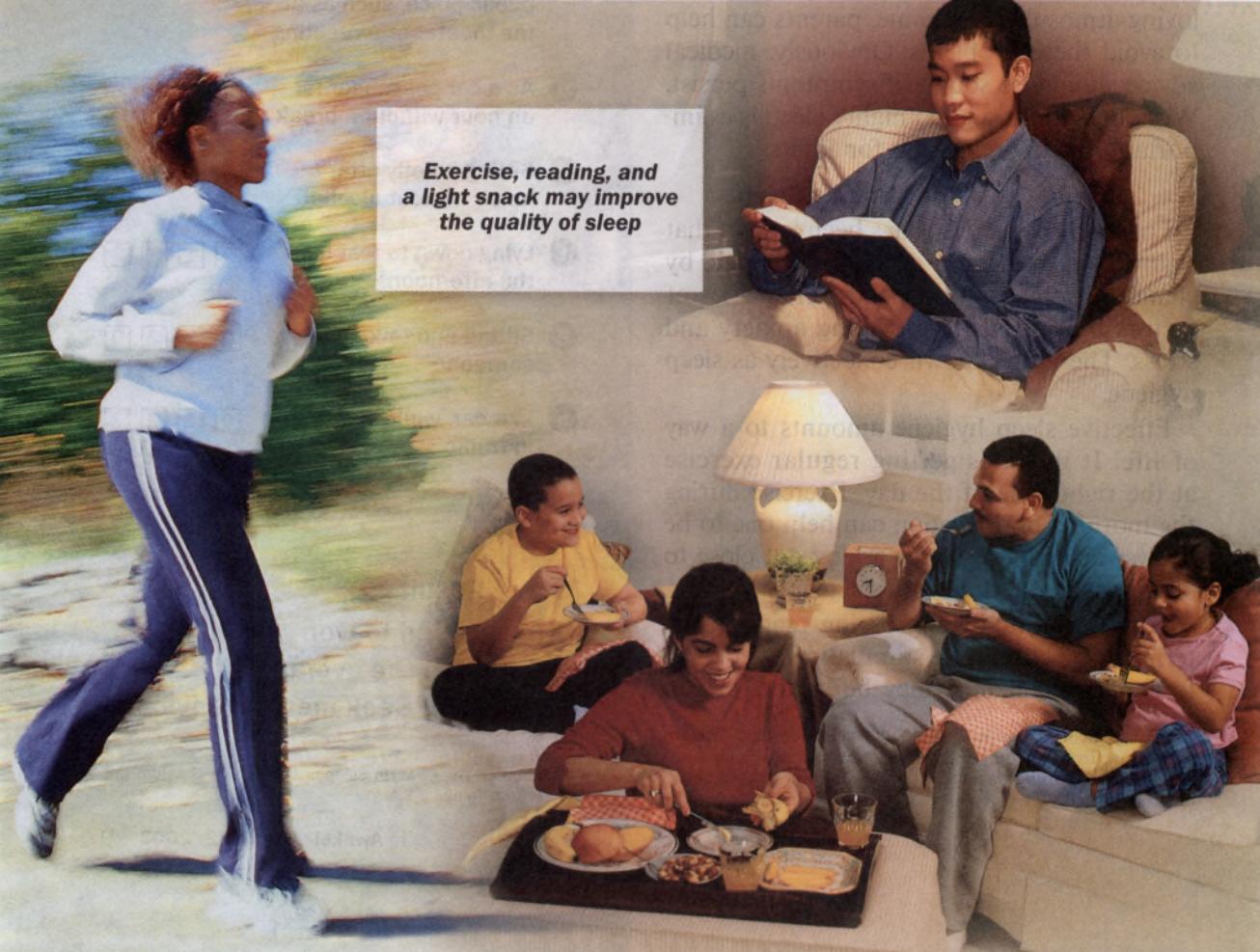
Experts say that you can teach your brain to associate bed with sleep by lying down only when you really mean to sleep. People who eat, study, work, watch TV, or play video games in bed may find it harder to fall asleep.

Preparing the body for restful sleep also involves watching your diet. While alcoholic drinks make a person feel drowsy, they can actually impair sleep quality. Coffee, tea, cocoa, chocolate, and cola-based drinks should be avoided at night because they are stimulants. On the other hand, small quantities of mango, sweet potato, banana, persimmon, palm cabbage, rice, bean sprouts, or nuts stimulate the production of serotonin and can thus be sleep-inducing. A word of warning: Eating a heavy

meal late at night can be as harmful to sleep as going to bed on an empty stomach.

Just as important as our presleep routine is the environment in which we sleep. A pleasant temperature, a dark and noise-free room, and a comfortable mattress and pillows are an invitation to a good night's sleep. In fact, with so much comfort, it may be hard to get up the next morning. But remember, staying in bed longer than necessary, even on the weekend, can disturb your sleep pattern and make it harder for you to sleep the following night.

Surely, you would not purposely harm any of your vital organs. Sleep is just as vital, a part of life that should not be neglected or underestimated. After all, a third of our life is spent sleeping. Can you improve your sleeping habits? Why not start tonight!



Exercise, reading, and a light snack may improve the quality of sleep

Young People Ask . . .

Music Videos —How Can I Be Selective?

"When I see the name of a questionable group or song displayed, that's when I change channels." —Casey.

MUSIC VIDEOS—many youths find them to be enormously entertaining. But as a previous article in this series showed, many music videos contain shocking portrayals of sexual immorality and violence.* Of course, when any form of entertainment promotes what God condemns, a Christian should refrain from watching it. However, not all music videos are brazenly immoral. Some may be relatively wholesome. Others may seem free of outright wickedness. Yet, such videos may well convey subtle messages that conflict with God's Word.

If your parents agree that you can watch music videos, you will need to be selective and use your Bible-trained "perceptive powers" so that you can distinguish what is fit or unfit for viewing. (Hebrews 5:14) What Bible principles can help you in this regard? The following are some Bible texts and comments that may prove helpful to you.

Proverbs 4:23: "More than all else that is to



be guarded, safeguard your heart, for out of it are the sources of life." Do you own some sports equipment or a musical instrument that is precious to you? You no doubt take pains to keep it in good repair and in a safe place. You certainly would not place it out on the street unattended, even momentarily, for fear that it might be damaged or stolen. Yes, you *safeguard* it. Similarly, you must make a decision that you will safeguard your heart, not putting it in even momentary danger by exposing it to unwholesome entertainment.

Ephesians 2:1, 2: "It is you God made alive though you were dead in your trespasses and sins, in which you at one time walked according to the system of things of this world, according to the ruler of the authority of the air, the spirit that now operates in the sons of disobedience." The air is the spirit of the world, the way of thinking and the attitudes that lie behind ungodly behavior. This spirit is reflected in many music videos and is diametrically opposed to God's spirit, which produces such qualities as joy, peace, and self-control.—Galatians 5:22, 23.

* See the article "Young People Ask . . . Should I Watch Music Videos?" appearing in our issue of February 22, 2003.

2 Timothy 2:22: “Flee from the desires incidental to youth.” Watching sexual scenes—even when they are brief—will only fan the flames of desire. Many young ones admit that they find such scenes difficult to forget; they may even tend to replay them mentally over and over. A young man named Dave, who saw a suggestive video, confesses: “After that, every time I heard that song I thought of this video.” Viewing such videos could thus nurture a desire for immoral sexual relations.—1 Corinthians 6:18; Colossians 3:5.

Proverbs 13:20: “He that is having dealings with the stupid ones will fare badly.” Ask yourself, ‘Would I invite practitioners of violence, spiritism, drunkenness, or immorality into my house?’ Association with such ones through the medium of television is tantamount to inviting them into your home. Can doing so cause you to “fare badly”? Kimberly observes: “I’ve seen situations where girls will, at a gathering, imitate the dress or suggestive dance moves that they had recently watched on a video.” You may have seen something similar. By imitating those who have no regard for godly standards, these youths show that they are already beginning to “fare badly.” So by all means, avoid any form of “bad associations.”—1 Corinthians 15:33.

Psalm 11:5: “Jehovah himself examines the righteous one as well as the wicked one, and anyone loving violence His soul certainly hates.” If we watch videos that promote senseless, degrading violence, could it at least give the appearance that we are ‘lovers of violence’?

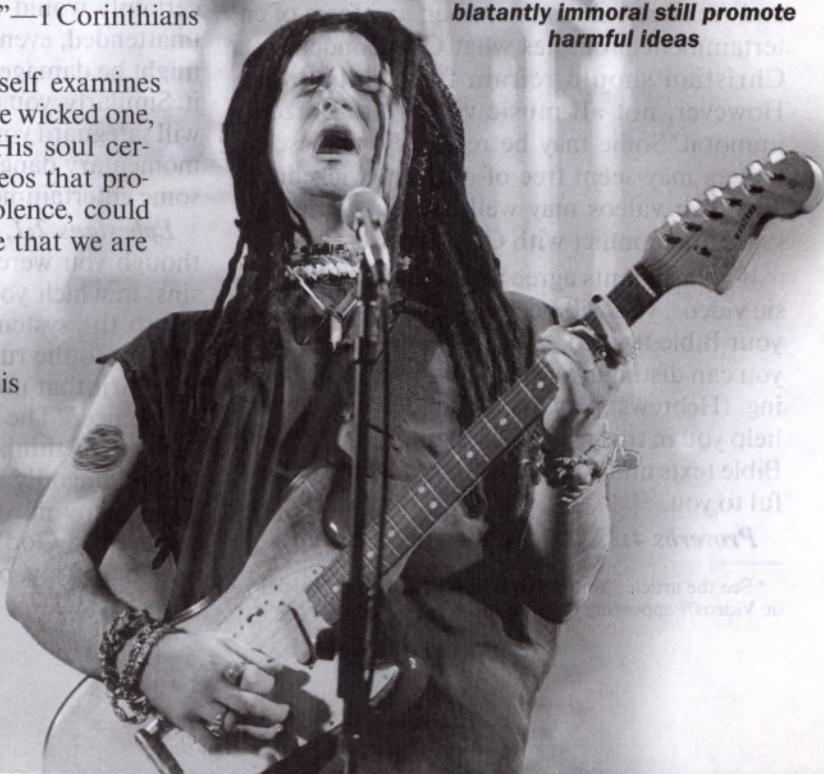
The Challenge of Being Selective

Because “the whole world is lying in the power of the wicked one,” it has become increasingly difficult to find entertainment that is not tainted with the thinking and attitudes of the world. (1 John 5:19)

Some music-video channels may show a substantial amount of objectionable material. Even when the programming is not blatantly immoral or violent, oftentimes it is still promoting the spirit of the world. A professional musician observed that one well-known music-video channel “has turned from a music channel into ‘a lifestyle channel.’”

The solution may seem simple: If a video is bad, change the channel. The problem is, you may need to be just as vigilant when watching other TV channels. Many feature programs that are graphically violent or lewd or that show people in morally compromising circumstances. Admittedly, it can be annoying—perhaps even frustrating—to try to enjoy some entertainment while at the same time remaining ever ready to change the channel. And sometimes, by the time the channel has been changed, the damage has been done. Immoral mental pictures have already been imprinted on the mind. Nevertheless, you can be sure that Jehovah God will bless any sincere efforts you

Some videos that are not
blatantly immoral still promote
harmful ideas



put forth to safeguard your heart.—2 Samuel 22:21.

There are other practical steps that might prove useful. Casey, mentioned earlier, explained what he finds helpful: “The name of the group and the song title are usually displayed at the start of the video. Bands have reputations, so you almost always know what groups and what songs are probably going to be bad. So when I see the name of a questionable group or song displayed, that’s when I change channels. Right at the start.”

‘Speaking the Truth in Your Heart’

Even if you are armed with a knowledge of Bible principles, it is possible to begin tolerating what is offensive. How? By allowing yourself to rationalize. (James 1:22) The Bible tells us that Jehovah’s friend is one who is “speaking the truth in his heart.” (Psalm 15:2) So be honest *with yourself*. Avoid self-deception. If you find yourself justifying your watching something questionable, ask yourself, ‘Would Jehovah really approve of my watching this?’ Remember, often the challenge is not merely knowing what is right or wrong but deciding that you will *do* what is right! You must view your relationship with Jehovah as more precious than some form of entertainment.—2 Corinthians 6:17, 18.

It is usually not enough to make some halfhearted, general resolve to be more selective. Your resolve can fade quickly if it is not firm. The Bible tells us how the man of God named Job resolved to remain faithful to his wife. He said: “A covenant I have concluded

Resolve that you will not watch things that God disapproves



with my eyes. So how could I show myself attentive to a virgin?” (Job 31:1) Imagine that! Job made a covenant, or solemn contract, with himself to limit what he would allow his eyes to see. You can, in effect, do the same thing. Make a firm resolve—a solemn promise to yourself—not to look at things that are bad. Set specific limits. Make it a matter of prayer. Then be true to your agreement, even writing it down if that helps. If you need a little extra support, why not talk things over with someone older whom you trust—your parents, for example?

In view of the dangers, some Christian youths have decided simply not to watch music videos at all. Whatever your decision is in this regard, use your perceptive powers. Maintain a clean conscience. By sticking to entertainment that is wholesome and refreshing, you can avoid harming yourself and also retain your friendship with Jehovah.

In Our Next Issue

■ Drug Abuse in the Family

—What Can You Do?

■ Have a Nice Weekend!

■ What Is Materialism?

WHEN A CHEMICAL PLANT EXPLODED

BY AWAKE! WRITER IN FRANCE

ON SEPTEMBER 21, 2001, just ten days after the attack on the World Trade Center in New York, a huge accidental explosion in a chemical plant tore through the suburbs of Toulouse, in southwest France. It was what the French newsmagazine *Le Point* described as "France's worst industrial disaster since the end of World War II."

Some 300 tons of fertilizer exploded, leaving a crater 160 feet in diameter and 50 feet deep. The blast and resulting shock wave killed 30 people and injured more than 2,200. About 2,000 homes were destroyed, and 27,000 others within a radius of five miles were damaged. Panic ensued as people incorrectly assumed that a terrorist attack was to blame and that a cloud of poisonous gas had escaped from the plant.

Among Jehovah's Witnesses, several were injured by the blast, and many were affected in other ways by the explosion. Christian love moved fellow Witnesses to respond immediately. (John 13:34, 35) The following is an account of the relief efforts.



Benjamin and Khoudir

"Nothing Was Left of the Building"

Khoudir is one of the survivors who worked in the chemical plant. The explosion and flying debris knocked him out, fracturing his jaw and dislocating his collarbone. Benjamin, who worked next to the chemical plant, was thrown ten feet across

an office into a wall. Flying glass cut him in several places and pierced his right eye, damaging his sight. "I was fortunate not to have been at my desk," he said. "About 1,300 pounds of bricks fell onto my chair."

Alain, a teacher in a school just 650 feet from the plant, was making some photocopies when the blast occurred. He said: "Nothing was left of the building, just pieces of steel. No walls, no roof, nothing. I was struck by pieces of glass. I had gashes all over my face. It was like being hit in the face with a bludgeon." Alain was blinded in one eye and is partially deaf as a result of the blast.

Speedy Relief Efforts

As soon as possible, elders in the 11 congregations of Jehovah's Witnesses affected by the disaster contacted each member of the congregation to check for injuries or damage. Volunteers were immediately dispatched to those most in need of help. The volunteers soon learned that about 60 homes of Witnesses were damaged, and they assisted in relocating about ten of the families. Volunteers also helped repair two damaged Kingdom Halls. In addition, they offered practical assistance about how to make insurance claims.

Catherine and Michel live just opposite the plant. Catherine was driving her car at the time of the blast. She explains: "At first we felt what was like an earthquake. A few seconds later, we heard the explosion. Then we saw the smoke rising. I drove to my neighborhood; it looked like a war zone. All the houses were torn open, and the shop windows were smashed. People were running in the street. Others were sitting or lying on the road, crying or screaming. At home, all our windows and even the frames had been blown out, and no doors were left. Our Christian brothers and



Alain

Toulouse the day after the explosion

© LE SEGRETAIN PASCAL/CORBIS SYGMA



**Alain
and Liliane**

sisters quickly came to help us. By afternoon a team from the congregation had arrived with buckets and brooms along with plastic sheeting to seal the windows."

Alain and Liliane also live next to the plant. The explosion ripped through their apartment. "Everything was smashed," says Alain. "The walls and tiles were cracked, and the windows, doors, and furniture were all destroyed. There was absolutely nothing left. Our Christian brothers came immediately to help. They cleared up the debris and also helped clean other apartments in the building. Our neighbors were very surprised to see that so many people came to help." On the morning of the explosion, Alain had received a phone call from a Bible student asking him to come for a Bible study. Liliane had gone out to run an errand. Thus, neither was at home when the blast occurred.

The assistance that the Witnesses gave was not limited to members of the congregation. After helping each other, they then helped their neighbors, clearing debris out of apartments and sealing up

broken windows. The neighbors were very grateful and were surprised that no fee was charged.

Help was also offered to the local authorities, who were overwhelmed by the extent of the damage. Witnesses cleaned up schools and other public buildings. In one neighborhood, the local authorities sent Witness volunteers from door to door to assess people's needs.

Providing Spiritual Help

In addition to material help, many of the Witnesses in the area of the explosion were in need of spiritual help. Thus, traveling overseers along with local elders made calls on all those affected by the disaster. This support was greatly appreciated. Catherine stated: "The elders rallied around us. They came to encourage us. In fact, this was what we needed, more than material help."

The Christian love that quickly went into action following this disaster gave rise to some interesting comments. One Witness who was seriously injured said: "We just don't know what will happen tomorrow. We must constantly serve Jehovah as if it were our last day." (James 4:13-15) Another Witness concluded: "All of this has helped us to realize that we should not be unduly attached to any material things. What is of real value is to be found among Jehovah's people."





A VISIT TO A Banana PLANTATION

BY AWAKE! WRITER IN SOUTH AFRICA

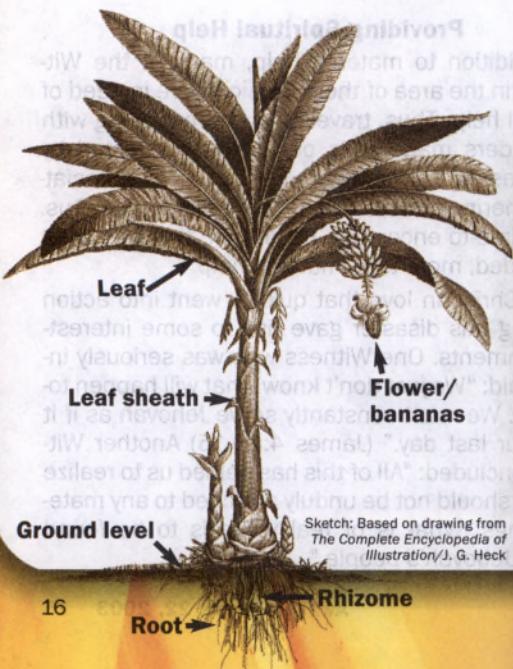
I HAVE always loved eating bananas. I suppose most people do. Bananas are not only delicious but also rich in vitamins, minerals, and fiber. Would you like to know more about this nutritious fruit? Recently a farmer and his wife showed me the amazing way in which bananas regenerate themselves.

Tony and Marie (shown above) farm in South Africa's Limpopo Province, in an area called Levubu. They grow a variety of crops on their 140-acre farm. Their main crop, however, is the banana. Tony would like to tell us more about this popular fruit.

Growing and Climatic Conditions

"The best soil type," explains Tony, "has a reasonably high clay content and is not sandy or rocky. It must also be deep and well drained. Bananas flourish in frost-free areas. In fact, they enjoy high temperatures. Levubu's average annual temperatures range from 55 to 95 degrees Fahrenheit." When I ask about rainfall, Tony responds: "Bananas require either regular rainfall or weekly irrigation."

A banana plant may look like a tree, but the trunk is made, not of wood, but of compact leaf stalks. The banana is actually a giant herb, not a tree. The real stem lies underground and is called





The huge purple flower eventually becomes a bunch of bananas

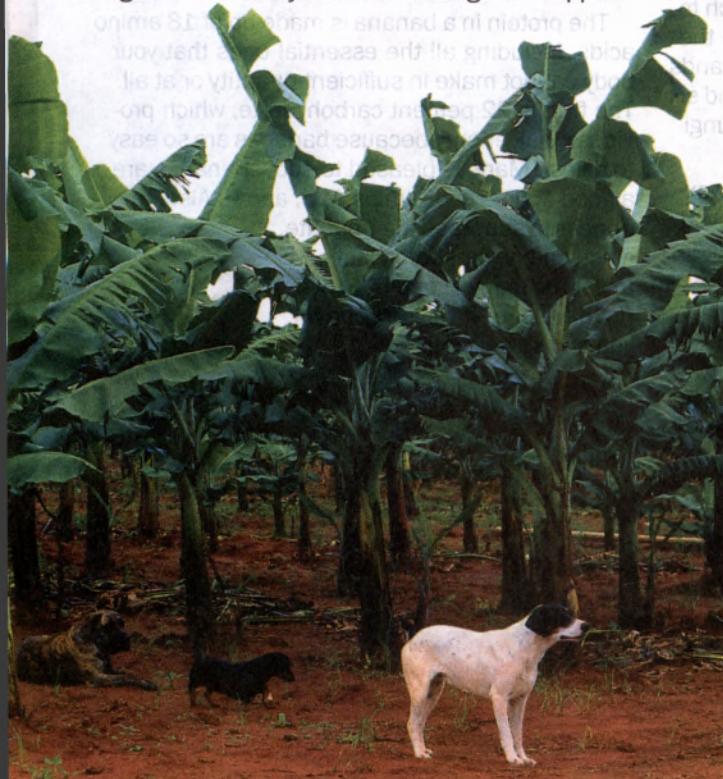
Photo by Kazuo Yamasaki ▲

a rhizome. Roots descend from the rhizome, and leaves and eventually a large purple flower grow from it. Shoots also sprout from the rhizome to become new plants.

Banana plants have three basic stages of development, which local farmers refer to as "the grandmother, the daughter, and the granddaughter." (See photo.) The "grandmother" will bear fruit this year, the "daughter" next year, and the "granddaughter" the third year. "Granddaughters" appear

in fairly large numbers next to their "mother." When these "babies" reach about knee height, all are pruned away except for the most promising shoot.

The huge purple flower, which eventually becomes a bunch of bananas, grows upward from the hidden rhizome through the center of the plant. It finally emerges between the two top leaves and hangs down. As the flower petals drop off, the 10 to 15 undeveloped hands making up the bunch are exposed—growing upside down to the





**Harvesttime (at left);
a fresh crop on the way (above)**

inexperienced eye! A hand can be composed of 20 or more individual developing bananas, referred to as fingers.

Harvesttime

The time from the emergence of the purple flower to the banana harvest can vary from three to six months, depending on the time of the year. The fruit is harvested green, but only after the fingers have filled out to a roundish shape. The average weight of a marketable bunch is about 75 pounds. At harvest a plastic slip is pulled over the bunch to prevent bruising while it is being conveyed to the packinghouse on a wagon. In this facility the hands are cut to small groupings of between three and six fingers and are then treated in a solution of fungicide for the control of what is called collar rot.

In South Africa the fruit is then packed into wax-treated, ventilated cardboard cartons and moved into a ripening room. Here a gas, ethylene, triggers the ripening process.* The cartons are kept here at a controlled temperature for a day or two and are then shipped off to the consumer.

"Perhaps I'm prejudiced," says Tony, with a twinkle in his eye, "but I think Levubu bananas have an exceptional flavor, likely because of our soil. Regrettably, because we are so far from any export city, they are enjoyed in this country only."

* When bananas ripen naturally, they discharge the same gas, which furthers the ripening process. Thus, another way to ripen green bananas is to place a few ripe ones among them.

Good for Your Health

Bananas are rich in potassium. "Numerous studies indicate that this nutrient can help strengthen your bones and lower your risk of high blood pressure and stroke," states *Health* magazine in an article about bananas. "Bananas," the magazine adds, "contain birth-defect-fighting folate, a B vitamin crucial for anyone who is pregnant or of childbearing age." Bananas contain other vital minerals, such as magnesium, which helps bones absorb calcium and thus remain strong.

The protein in a banana is made up of 18 amino acids, including all the essential ones that your body cannot make in sufficient quantity or at all. The fruit is 22 percent carbohydrate, which provides quick energy because bananas are so easy to digest. Marie is pleased to add: "Bananas are a good source of vitamins A, B, and C. Also, they appear to suppress the appetite, since one never seems inclined to eat too many at once." So why not have one—it will be good for you and so delicious!



AKAN PROVERBS

A Mirror on Social Norms

BY AWAKE! WRITER IN GHANA

WHAT is a proverb? One dictionary defines a proverb as “a short sentence that people often quote, which gives advice or tells you something about life.” The Yoruba of Nigeria define a proverb more colorfully, calling it “a horse which can carry one swiftly to the discovery of ideas.”

The importance of proverbs, or proverbial sayings, is captured in this proverb, well-known to the Akan people of Ghana: *“A wise person is spoken to in proverbs, not in prose.”* The point is that a wise person does not always need a lecture in order to be convinced of the right thing to do. A fitting proverb stimulates thinking, imparts understanding, and can motivate one to do what is right.

In Ghana, proverbs are used profusely during marriage ceremonies and funerals and are featured in folkloric music. They are also indispensable in diplomatic parleys. A spokesman or an emissary often resorts to the skillful use of proverbs.

In Akan society, skill in the use of proverbs is a hallmark of wisdom. Interestingly, in the Bible, King Solomon—a man famed for his wisdom, learning, and diplomacy—was credited with knowing 3,000 proverbs. Of course, the Bible’s proverbs were divinely inspired and are consistently true, unlike proverbs based on human experience and insight. Human proverbs, no matter how wise, should never be put on a par with the Bible. But let us take a look at some Akan proverbs.

Concept of God

In Ghana, proverbial sayings often acknowledge the existence of God, and this is reflected

in many Akan proverbs. Atheistic ideas have no place in Akan philosophy. For example, one proverb states: *“No one shows God to a child.”* God’s existence is all too obvious even to a child. This proverb is often used in reference to something a child will automatically learn with little instruction.

Another Akan proverb states: *“If you run away from God, you are still under him.”* Thus, it is an exercise in self-delusion for anyone to attempt to ignore God. Long ago, the Bible made a similar point, saying that God’s eyes “are in every place, keeping watch upon the bad ones and the good ones.” (Proverbs 15:3) We are all accountable to the Almighty.

Expression of Social Norms and Values

As is true of proverbs from other cultures, Akan proverbs are a repository of social norms and values. For instance, the power of the spoken word is well highlighted in this example: *“A slip of the tongue is worse than a slip of foot.”* An unruly tongue can indeed do great damage and may actually make a difference between life and death.—Proverbs 18:21.

However, when held in check, the tongue can be a real peacemaker, as testified to by the adage, *“In the presence of the tongue, the teeth do not litigate.”* The point here is that matters can be amicably settled between contending parties—say, a man and his wife—through calm discussion. And even when this does not work, the skillful use of the tongue in arbitration can stem the tide of conflict.

Practical Wisdom

The value of discernment and forethought is vividly expressed in a number of proverbial

sayings that emphasize practical wisdom. An impulsive, foolhardy person who fails to consider the consequences of his actions could take advice from this maxim, "You first find an escape route before taunting the cobra."

A parent noticing some bad traits in a child would want to heed this proverb, "If you notice a growing stalk that can pierce your eye, you uproot it, you don't sharpen it." Yes, any bad trait should be uprooted—or nipped in the bud—before it blooms into real trouble.

Allusion to Mores and Cultural Practices

Sometimes it is necessary to understand a culture to get the sense of its proverbs. For example, among the Akan it is considered bad manners to gesture with the left hand before others, especially older ones. This rule of etiquette is alluded to in the proverb, "You don't use the left hand to point the way to your hometown." In other words, one should appreciate what he has, including his origins.

A proverb alluding to the traditional dining practice in a typical Akan home states: "A child who learns to wash his hands eats with his elders." At mealtimes, members of the household are grouped on the basis of age. However, a child who conducts himself well, especially in the areas of physical cleanliness and etiquette, may be elevated to join his father and other adults at their table. The proverb underscores the point that one's respectability is determined more by his conduct than by his age.

Are you contemplating marriage? Then consider this Akan proverb, "Marriage is not palm wine to be tasted." Sellers of palm wine, a fermented beverage tapped from the palm tree, generally allow prospective buyers to have a taste before deciding how much to buy or even whether to buy at all. Marriage, however, cannot be so tasted. This proverb highlights the permanence of the marital bond and the unacceptable status of trial marriages.

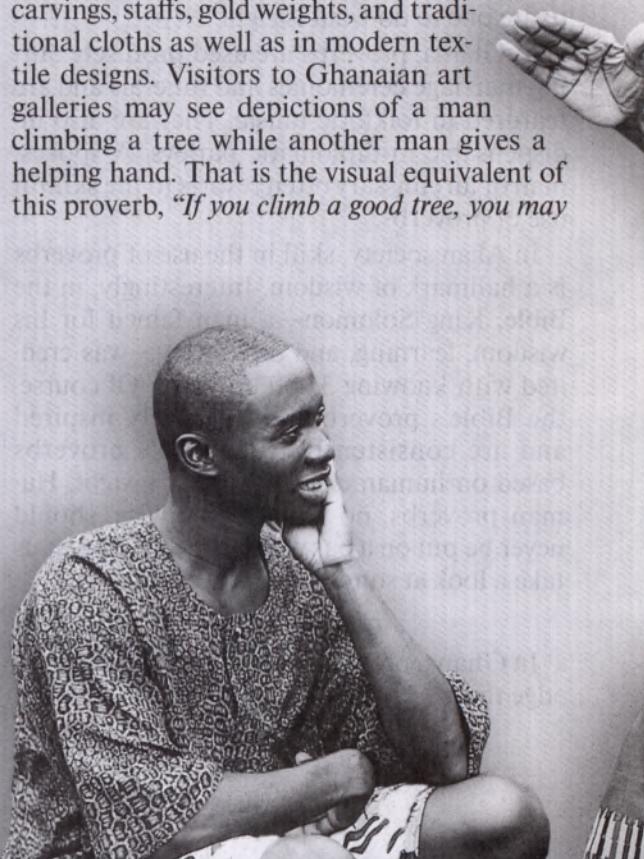
Critical Observation of Things

A host of proverbial sayings testify to the keen observations that Akan ancestors made of people and animals. A close examination of a hen with her chicks, for example, gave rise to this proverb, "A chick that stands by its mother gets the thigh of the grasshopper." The meaning? If a person isolates himself, he is easily forgotten when it comes to sharing good things.

Anyone observing a dead frog can hardly fail to understand the truth of the saying, "The full length of the frog is seen upon its death." This proverb is often cited when a person is unappreciated. In a situation like this, the unappreciated one takes solace in the fact that his or her absence might provide the opportunity for people to see in full measure his or her good qualities.

Proverbs in "Shorthand"

Though Akan proverbs have been passed from generation to generation by word of mouth, many sayings have been preserved in symbolic art. Such art is seen in wood carvings, staffs, gold weights, and traditional cloths as well as in modern textile designs. Visitors to Ghanaian art galleries may see depictions of a man climbing a tree while another man gives a helping hand. That is the visual equivalent of this proverb, "If you climb a good tree, you may



be given a push." The underlying message is obvious—if you pursue worthwhile goals, you may be given support.

Funerals especially provide the occasion for what one writer calls "textile rhetoric." The mournful atmosphere of the occasion actually calls for meditative reflection on life. Consequently, the designs seen in funeral cloths convey messages with philosophical underpinnings. For example, a cloth depicting a ladder or a staircase recalls the proverb, "*One person alone does not climb the ladder of death.*"* This alerts all to take a humble view of themselves and not to live life as though they were immune to death.—Ecclesiastes 7:2.

In Akan society, emissaries or spokesmen for traditional rulers are well versed in the eloquent use of proverbs, and they also carry a staff of office with motifs espousing some cherished value of the people. For instance, a bird clawing the head of a snake is "short-hand" for the saying, "*If you get hold of the head*

* It is worth mentioning that this motif is found in cloths of varying colors and is not restricted to the dark ones normally used for funerals.

of a snake, the rest of it is mere rope." The implied message? Deal with problems resolutely—head-on.

Proverb Etiquette

As with any illustration, when and how a proverb should be used depends on both the argument and the audience. The beauty of an argument can be marred by the incorrect use of proverbs. And since in some cultures the use of proverbs forms an important part of communicative etiquette, any misuse can influence people's perception of the speaker in a negative way.

In Ghana, elders of society are regarded as authors and custodians of proverbs. Thus, proverbial sayings are often preceded by the phrase, "Our elders say . . ." And in a situation where a speaker is talking to a much older audience, it is polite to precede the use of a proverb with the expression, "It is you elders who say . . ." Out of respect, a younger speaker does not want to be seen as teaching his elders the words of wisdom embodied in the proverb.

Some Noteworthy Observations

Proverbs can either precede an argument or follow it. Also, they can be so cleverly woven into the fabric of an argument that one might need insight to detect the allusion. Concerning a humble and peace-loving person, for example, an Akan might say: "If it depended on So-and-so alone, there would be no gunshot in this village." This recalls the proverb, "*If it were left to only the snail and the tortoise, there would be no gunshot in the bush.*" Both creatures are seen as meek and unobtrusive and not inclined to fight. People who possess these qualities make for peace.

However, if you want an Akan to recite a string of proverbs, you might succeed in getting only one, "*There cannot be a dream where there is no sleep.*" In other words, one cannot use proverbs in a vacuum any more than one can dream while awake. Circumstances determine their use.





A TRIP ON THE WORLD'S LONGEST TROLLEYBUS LINE

BY AWAKE! WRITER IN UKRAINE

Can a few coins buy an unforgettable experience?

Yes, when you purchase a ticket on the world's longest trolleybus line. The trolleybus travels about 60 miles, from Simferopol, in the center of the Crimean Peninsula of southern Ukraine, to Yalta, on the sunny northern shore of the Black Sea. Why not join us for a fascinating trip?

AT THE Simferopol Transportation offices, we meet Slavnyi Giorgi Mihailovich—Mr. Slavnyi, for short. He has worked here since 1959, and he certainly knows his business. Mr. Slavnyi first escorts us through the transportation museum, where photographs of the men and women who built this trolley line are on display. "A trolleybus requires much more than just a paved road," he explains. "Construction workers erected hundreds of towers to hold many kilometers of overhead electric cable. Engineers designed power stations to provide the electricity."

"Why use electric trolleybuses over such a long mountainous route instead of gasoline-driven buses?" we inquire.

"Trolleybuses are cleaner than gasoline-engine buses," he says. "We were protecting our heritage of pristine mountains and unblemished shorelines."

"But could a few buses really do that much harm?" we ask.

"A few buses?" he retorts. "Why, in their heyday several years ago, during the summer season, trolleybuses left every two to three minutes and made a total of 400 trips per day."

With that fact in mind, we are eager to start our trip.

The Journey Begins

The Simferopol Central Station is our departure point. Dozens of electric cables overhead sketch a silvery maze. We locate the cashier's booth and purchase our tickets. Then we hop aboard the No. 52 trolleybus. We're off!

After 18 miles, we begin climbing through the mountains. Soon we are in the cold shadows of towering natural skyscrapers. Steep slopes, covered in evergreens and hardwoods, reach downward to meet snow-covered valleys. Upon reaching the summit, we quickly catch our breath for the equally spectacular descent. Before us a serpentine road drops to the horizon. The powerful brakes of the trolleybus

UKRAINE

CRIMEA

Black Sea

SIMFEROPOL



Vorontsov Palace, Alupka

check our gathering speed. Our driver brings us safely through!

At the bottom we enter the town of Alushta, turn right, and navigate south along the coastal road. To the left of our cruiser is the Black Sea. To the right, the majestic Crimean Mountains form a protective flank.

A little farther up the road, on the outskirts of the village of Pushkino, we spot Bear Mountain. As the local residents explain the legend, a giant bear turned to stone while trying to gulp down the Black Sea. Its head, they say, is still underwater taking a long drink. I ask myself, 'Why don't the villagers say that the bear fell into the water because he imbibed too much wine?' After all, we have passed many fields of grapes.' This is wine country and home to the Massandra Vineyard, winner of international competitions.

Next, in the village of Nikita, we step off the trolleybus at the Nikitskyi Botanical Garden. The garden is truly international, containing thousands of plants from all over the world. With our knowledgeable guide Tamara, we enjoy the aroma of large evergreens near the entrance. "These are cedars of Lebanon," she explains.

Bear Mountain

Marble Cave,
Chatyr-Dag
Mountain

Chatyr-Dag +
Mountain

Alushta

Pushkino

Bear +
Mountain

Ai Petri
Mountain

Yalta

Nikita
Massandra

Ai Petri +
Mountain

Alupka

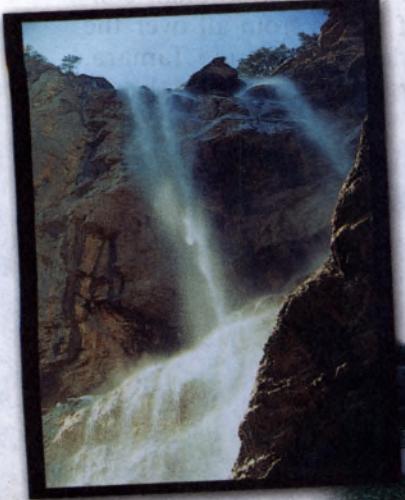
Livadia

'Swallow's Nest' Castle, Yalta



**Massandra wine cellar,
Yalta, with bottles of sherry
from 1775**

**Uchansu Waterfalls, Yalta,
at a height of over 320 feet,
the highest in the Crimea**



"Solomon constructed his temple with these stately trees." Our guide is correct, for the Bible reports that cedars were used extensively in that monumental building project undertaken by Solomon.—1 Kings 5:6-18.

Meandering down well-traveled gravel paths, we notice a bed of thorny bushes. "Roses," Tamara declares. "The garden has 200 varieties and is in full bloom in late May and early June." Later we stand before an unpretentious bush about eight feet tall. "This is the iron tree," Tamara tells us, clearly pleased with the specimen. "The resilient wood, a metal substitute, can be hammered like a steel nail. It even sinks in water." A trolleybus soon comes along, and we are happy to sit down again and rest our tired legs during the short ride into Yalta, the trolley's final stop. Many remember Yalta primarily because of the historic World War II conference held at the Livadia Palace in 1945. At this conference the heads of the three principal Allied States met to plan the final attack on and occupation of Nazi Germany.

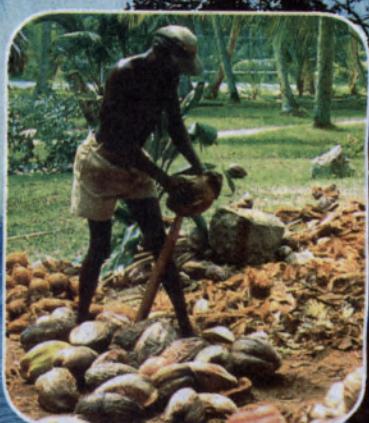
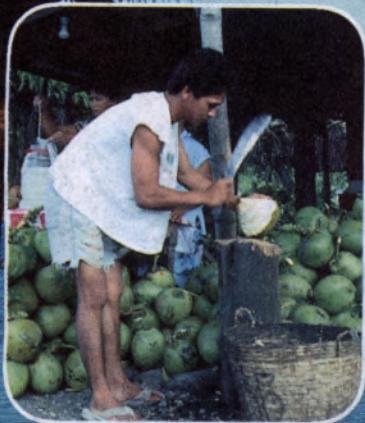
Return Trip

Evening approaches, and it is time to board a trolleybus for the return trip home. Along the road children sell assorted flower bouquets. Impulsively exiting to make a purchase, we are instantly surrounded by a group of eager entrepreneurs. "What are those pearly white flowers?" I ask Yana, a sandy-haired 15-year-old girl. "Snowdrops," she answers proudly. Nodding toward the hill across the road, she adds: "We gather them on that slope early in the morning as the line of snow begins to melt."

Soon we are on the trolleybus again, bouncing along as we reach the end of our journey. Like children who have finished a ride on a roller coaster for the first time, we want to go back and do it all over again!

Historic Livadia Palace, Yalta





ONE OF THE MOST USEFUL NUTS ON EARTH

THERE is an extraordinary “nut” that has traveled around the globe. It provides both food and drink. And the unique silhouette of the tree that bears this nut is the hallmark of tropical islands. Which nut are we talking about? The coconut—one of the most useful nuts on earth.*

For people not from the Tropics, the coconut palm may be little more than a symbol of

a tropical holiday. But for those who live in the Tropics, the tree has much more to offer. Indonesians claim that its fruit has “as many uses as there are days in a year.” In the Philippines it is said: “He who plants a coconut tree plants vessels and clothing, food and drink, a habitation for himself, and a heritage for his children.”

This saying is no exaggeration. According to the book *Coconut—Tree of Life*, the coconut palm “supplies not only food, water and oil for

* Although in some lands the coconut is not considered a nut, several sources do refer to the fruit's seed as a nut.

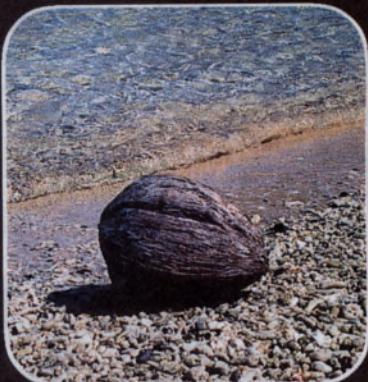
COCONUT CURIOSITIES

COCONUT CRAB Humans are not the only ones who appreciate the bounty of the coconut. The coconut crab lives in a hole in the ground during the day, but it feasts on coconuts at night. Although humans need a machete to split open a coconut, this resourceful crab goes through quite some work to split a coconut by pounding it against a rock until it cracks

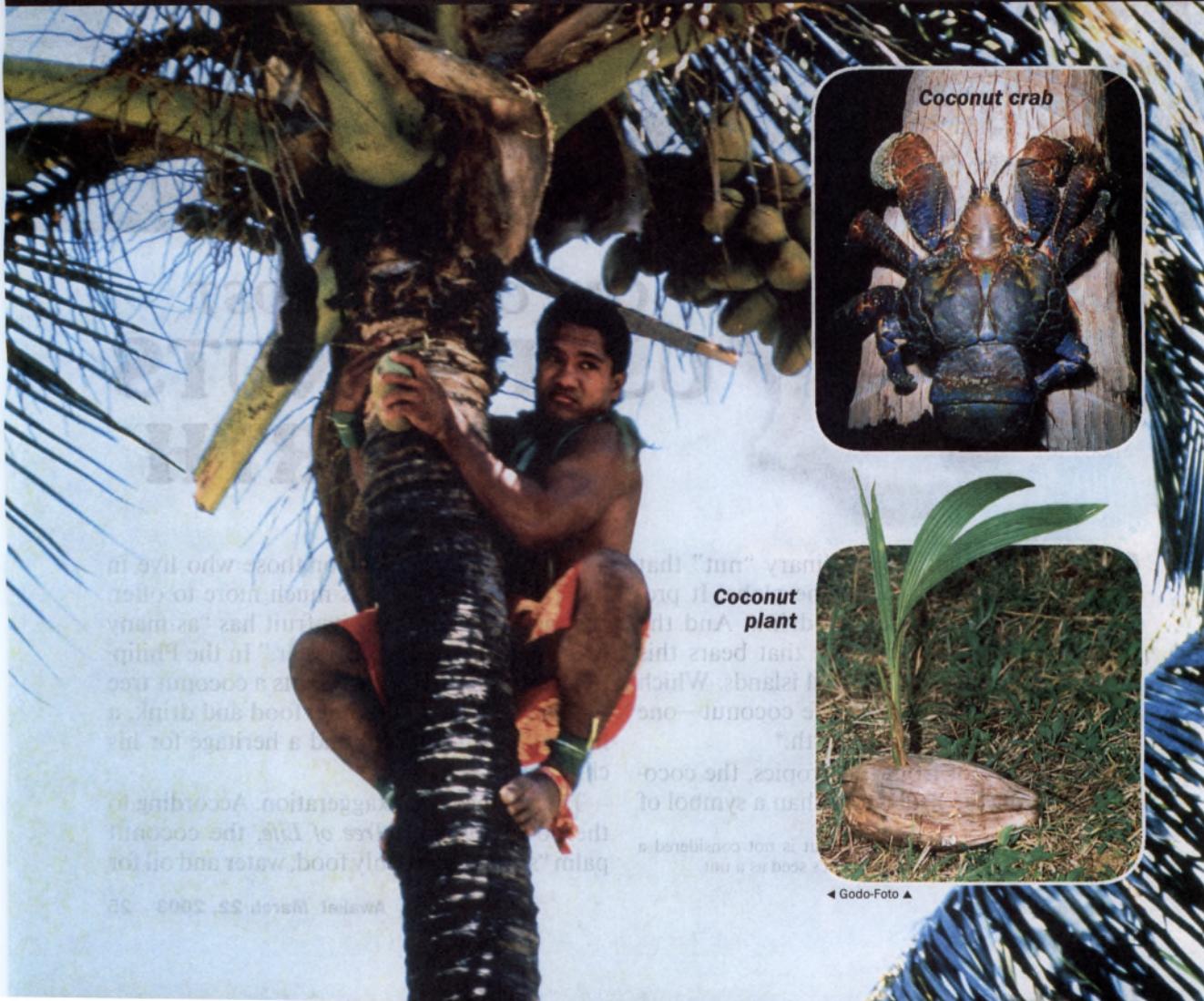
open. A diet that includes coconuts seems to suit this creature—it can live for over 30 years!

COCONUT IN COSMETICS

Since coconut oil is ideal for the skin, manufacturers use it in lipstick and suntan lotion. And if you use biodegradable soap or shampoo that makes plenty of lather, coconut oil may well be one of its essential ingredients.



The coconut can survive ocean voyages



Coconut plant

◀ Gado-Foto ▲

cooking, but also leaves for thatch roofs, fibre for ropes and mats, shells that can be used as utensils and ornaments, and the sweet sap of the inflorescence from which sugar and alcohol are made." The book adds: "Even the wood, if cut in the right way, can be used." In fact, the inhabitants of the Maldives Islands in the Indian Ocean constructed boats out of coconut products, and it is said that they sailed them to Arabia and the Philippines. But the coconut, rather than its cultivators, has proved to be the greatest seafarer of all.

A Seafaring Seed

The coconut makes itself at home along most tropical shores, providing there is sufficient rainfall. Although local people may plant the versatile coconut palm, the coconut has made its own way to some of the most isolated places on the planet. Seeds are dispersed in many ways, but the coconut harnesses the waters of the deep. And therein lies its success as a world traveler.

When a coconut is ripe, it drops to the ground. In some instances, the ripened nut rolls down the beach toward the water. The high tide may then wash the coconut out to sea. Because its fibrous husk holds plenty of air, the coconut floats easily in the water. If the coconut was on a Pacific atoll, it may only drift to the other side of the lagoon. But if it reaches the open sea, the coconut can travel great distances.

Saltwater, which destroys most other seeds, takes a long time to penetrate the hardy coconut husk. Coconuts can easily withstand three months at sea—at times drifting thousands of miles—and still germinate successfully when reaching a suitable beach. Perhaps this is the way the coconut has colonized many of the world's tropical coastlines.

The Taste of the Tropics

Outside the Tropics, people may think of coconut as a flavoring for candy bars or cookies. Go to Southeast Asia, however, and you will

discover that the coconut is truly a versatile nut. According to the book *Pacific and Southeast Asian Cooking*, "coconut is the one essential ingredient in the cooking of all the countries and regions and islands from Hawaii to Bangkok." The book also states that to the inhabitants of those areas, "the coconut is a necessity of life from which they receive nourishment... in many forms and through an almost countless variety of dishes and tastes."

The reason for the coconut's pride of place in tropical kitchens is simple: It supplies water, milk, and cooking oil. The clear, sweet liquid that fills the unripe, green nut is known as coconut water or coconut juice. It makes a delicious, refreshing drink that is often sold at wayside stores in the Tropics. Coconut milk, on the other hand, is obtained by mixing grated coconut flesh with water and then squeezing out the liquid. Coconut milk adds flavor and substance to soups, sauces, and dough.

To extract cooking oil from coconuts, the farmer splits open the ripe nut and dries it in the sun. Once dry, the flesh of the coconut, or the copra, can be separated from the shell, and then the oil can be extracted. In the Tropics, coconut oil is the principal cooking oil, whereas in Western countries it is often used in margarine, ice cream, and cookies.

Harvesting coconuts is not an easy task. Often, a harvester will climb up the tree and cut off the nuts. Other harvesters use a long pole with a knife attached. In Indonesia, monkeys have been trained to do the job. The simplest method—preferred by those who want to be sure they harvest a ripe nut—is to wait until the nut falls to the ground on its own.

However it is harvested, the coconut's multiple uses have made it an ideal cash crop as well as an invaluable source of food for many. So the next time you see a coconut palm—be it in a picture or in real life—remember that it is much more than an ornamental tree that decorates tropical beaches. You are looking at a tree that produces one of the most useful "nuts" on earth.

Watching the World

Religious Intolerance Intensifies In Georgia

"Jehovah's Witnesses were planning a summer revival in a field next to a river gully here today, but a mob came the night before," states a report in *The New York Times*. "Two dozen men wearing crosses of the Georgian Orthodox Church arrived on buses and ransacked the home of the host, Ushangi Bunturi. They piled Bibles, religious pamphlets and Mr. Bunturi's belongings in the yard and burned them . . . They filled the baptismal pool with diesel fuel. The police went, too, including the local police chief . . . No one was arrested. . . . The attacks occurred as if scripted." While

there have been religious tensions "in many of the former republics of the Soviet Union, including Russia," says the *Times*, "Georgia is unique in the intensity of the violence toward religious minorities, and in the evidence of official complicity in the attacks. Georgia enshrined freedom of religion in its post-Soviet Constitution. But in the rising violence there have been dozens of mob and arson attacks and beatings."

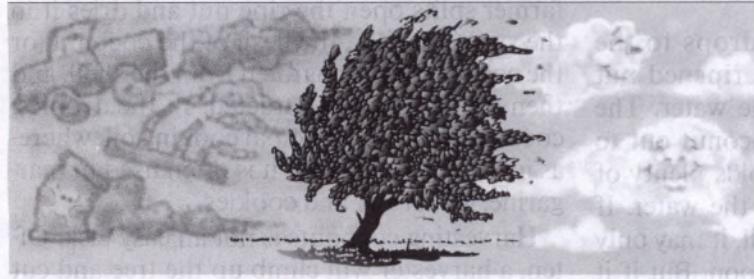
Youths Flock to "Fun Church"

Under the heading "Youths Said Yes to 'Fun Church,'" the German newspaper *Nassauische Neue Presse* reported on the first Church Youth Day festi-

val organized by the Protestant church in Hesse and Nassau. About 4,400 attended the five-day festival. The program included workshops and group discussions, night services with candlelight and songs, and plenty of sports, parties, and live music. "Completely missing among the more than 220 events were conventional Bible studies and traditional church services," the newspaper noted. One youth pastor was completely surprised "that some youths asked, of all things, for Bible studies, which have a reputation of being dry." Said one teenager: "Actually, the program has little to do with church, but the atmosphere is nice."

Religion and War

"The bloodiest and most dangerous disputes today . . . are wrapped in religion," states the newspaper *USA Today*. They are also very difficult to resolve. "The standard tools of diplomacy—a willingness to compromise, for instance, and to forgive old grievances—can be more difficult to apply when combatants claim God is on their side," the paper adds. "That's true even when religion is more a tool used to mobilize support than the cause of a conflict, which may center on less-spiritual struggles over land or power." Religious differences even make it difficult to establish a temporary truce. An example is the recent warring in Kosovo. An Easter pause was considered but could not be implemented as the Easter dates for the Catholic and Orthodox celebrations differed. "In the end, there was no pause," says *USA Today*.



Trees Reduce Urban Pollution

"For the first time experts have been able to measure how different species of tree can cut pollution," reports *The Sunday Times* of London. In a three-year study in the West Midlands area, scientists from England and Scotland measured soil samples taken near some 32,000 trees to see which species soaked up the most harmful particles. The researchers also measured particles in the atmosphere and ozone levels. The ash, larch, and Scots pine topped the list; least efficient were the oak, willow, and poplar. The study showed that "trees are up to three times more effective in ridding the atmosphere of pollution than grassland." Indeed, a computer projection showed that if just half of West Midlands' open space were planted with trees, air pollution from particles would be reduced by 20 percent.

HIV/AIDS Epidemic "Out of Control"

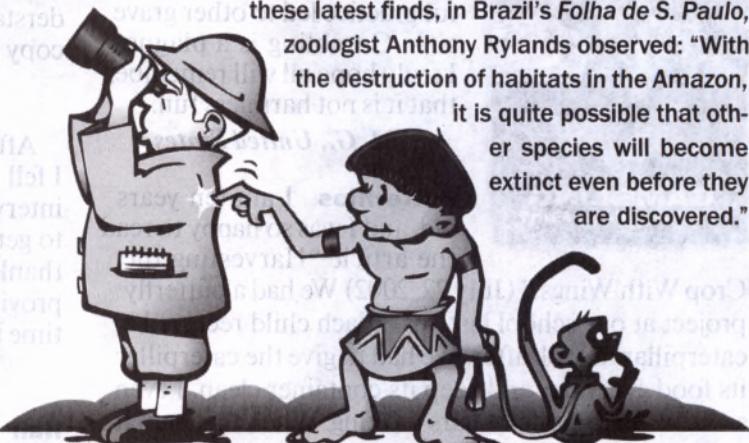
"Throughout the world, 40 million people are infected with HIV, 20 million have died from AIDS, and 750 000 babies are born with HIV infection every year," reports Britain's medical journal *The Lancet*. In the year 2001 alone, there were five million new infections and three million deaths due to AIDS. According to Peter Piot, executive director of the Joint United Nations Programme on HIV/AIDS, the epidemic is "out of control," yet still in its "early stages." He estimates that in the next 20 years, 70 million people will die from AIDS. In sub-Saharan Africa, between 30 and 50 percent of the population in some cities is HIV-positive. With so many young adults dying of AIDS, the worry is that by 2020, over 25 percent of the work force will be lost. "The effects on children have the most important implications for future economic recovery," says *The Lancet*. In Zimbabwe, "by early adolescence one in five can expect to lose at least one parent."

Breast-Feeding Benefits

"There is simply no better food for newborns" than breast milk, writes neurosurgeon Dr. Sanjay Gupta in *Time* magazine. "Breast-fed babies have lower rates of hospital admission, ear infection, diarrhea, rashes, allergies and other medical problems than bottle-fed tots." Breast-feeding is also reported to protect against respiratory illnesses. A Danish study concluded that "adults who as babies were breast-fed for seven to nine months had higher IQs than those who were breast-fed for two weeks or less." The

Discovering New Species

Primateologist Marc van Roosmalen has stumbled on two new species of monkeys in the Amazon rain forest, adding to the eight species that have come to light in the region since 1990. Interviewed in *National Geographic Today*, Van Roosmalen said: "I didn't realize the Amazon was so poorly known until I started finding all these new animals." The quest for unidentified species "has little to do with experience," adds Van Roosmalen, who has five new primates to his credit since 1996. Many species have been located by simply visiting remote Indian villages and checking out their pets. Commenting on these latest finds, in Brazil's *Folha de S. Paulo*, zoologist Anthony Rylands observed: "With the destruction of habitats in the Amazon, it is quite possible that other species will become extinct even before they are discovered."



American Academy of Pediatrics recommends that a child be nursed for six months and, if possible, for a year or more. "It turns out babies aren't the only ones who benefit from breastfeeding," says *U.S. News & World Report*. A study of 150,000 women in 30 countries revealed that "every year a woman breastfeeds she cuts her lifetime risk of developing breast cancer by 4.3 percent." Yet, "only half of American mothers breastfeed, for an average of two to three months."

Family Relationships Can Help Prevent Drug Abuse

A study of teenagers in Britain, Germany, Ireland, Italy, and the Netherlands "shows that the quality of family life, or rather the lack of it for many

young people, is at the core of the drugs problem in Western society," said researcher Dr. Paul McArdle of Newcastle University, England. As reported in *The Daily Telegraph* of London, when young people lived with both parents and enjoyed high-quality family relationships, especially with their mothers, only 16.6 percent developed drug habits. But when these factors were absent, 42.3 percent used drugs. "We spell out the dangers of drug abuse to children on TV and launch drug prevention initiatives in schools but it seems that no one is really tackling the issue of parental responsibility," said McArdle. "I believe effective prevention of drug use is more about family relationships than any other factor."

From Our Readers

Gambling I just finished reading the series "Gambling—Is It Harmless Fun?" (July 22, 2002) I thank Jehovah for using you to provide this timely information. I could hardly believe my eyes when I saw the behaviors listed for those who have a gambling problem. It was as if you were describing my mate! Sadly, this sinful practice led to other grave sins. Gambling is a plague. I truly hope all will remember that it is not harmless fun.

M. G., United States



Crop With Wings." (July 22, 2002) We had a butterfly project at our school last year. Each child received a caterpillar to look after. We had to give the caterpillar its food every day and keep its container clean. I even saw four of the caterpillars molting. When they pupated, we returned them to the biology station. Then we visited the emerged butterflies the following spring. Please keep writing such nice articles.

B. P., Germany

I grew up in a house near a meadow, and it was common to see many butterflies in our courtyard. I always admired their beauty. Now that I am an adult, these fragile creatures help me perceive Jehovah's qualities. (Romans 1:20) You can imagine my joy when I saw the pictures of multicolored butterflies in *Awake!* Thank you for your excellent work.

D. G., Slovakia

Postpartum Depression I have found that the information in the article "I Won My Battle With Postpartum Depression" (July 22, 2002) pertains well to *any* type of depression. I fight depression constantly. It is so encouraging to know that I am not alone and that depression, like all other sicknesses, will end under God's Kingdom.

C. H., United States

Ten months ago, after giving birth to a baby girl, I began to suffer from post-partum psychosis. I wanted nothing to do with my baby. Medical treatment and the loving support of my family and congregation have been of real help. I hope that this article will help other women and their families to understand this illness. I plan to give a copy to my doctor.

S. Z., South Africa

After the birth of my second child, I fell into a deep depression. It took intervention from friends and family to get me to seek medical help. I am thankful that Jehovah's organization provides spiritual food at the proper time through publications like *Awake!*

C. O., United States

Hair I would like to express my heartfelt thanks for the article "Do You Worry About Your Hair?" (August 8, 2002) I am 36 years old, and for some time I have been worrying about slight hair loss and the thinning of my hair. The article helped me to understand that losing some hair every day is natural. Now I feel much more at peace. Do not stop publishing articles like this one!

V. G., Slovakia

I received this article right on time. I was under extreme stress because my hair was falling out. The article calmed me down, especially the statement that "others are not usually as concerned about your hair as you are." It also helped me when I learned that even if one does not have a hair problem, some 70 to 100 hairs fall out every day!

E. L., United States



SAVED BY ITS STOMACH!

IT IS not fast. To many people it is definitely not pretty. But, oh, what a stomach it has! What are we talking about? The spiny puffer, also called the balloonfish and the long-spine porcupinefish. When threatened, this creature "undergoes a remarkable transformation," says *Natural History* magazine. Its body, which grows to about 20 inches in length, swells "until the fish is three times its usual size and has become a rigid, near-perfect sphere covered in spiky armor—not a good design for swimming but decidedly discouraging to attackers."

The fish inflates itself by pumping water into its stomach, which expands to nearly a hundred times the normal volume! The puffer accomplishes this astonishing feat thanks to a simple, elegant concept—pleats.

Actually, the puffer's stomach consists of pleats within pleats, explains *Natural History*. The largest ones are about an eighth of an inch wide "with yet smaller folds inside each one, and so on, down to pleats so tiny that they can be seen only through a microscope," says the article.

Of course, the puffer's skin must expand with its stomach. To accomplish that, the skin, which is composed of two layers, employs two different principles. Similar to the stomach, the inner layer is pleated, but the outer layer is elastic. This elastic coating prevents the skin from getting rumpled, and thus hydrodynamically impaired, when the puffer is deflated.

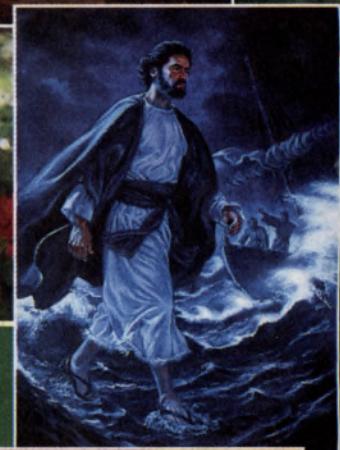
But to ward off would-be predators, the puffer does more than just swell. As its skin stretches, its spiny armor snaps into an upright position. So if you see a puffer while snorkeling, do not touch it! And beware of its mouth too; it can bite to the bone!

When God questioned Job about His creations, Job replied: "I have come to know that you are able to do all things, and there is no idea that is unattainable for you." (Job 42:2) Yes, even the chubby little spiny puffer, which would hardly win a race or a beauty contest, nevertheless gives abundant testimony to God's creative power and wisdom.

—Romans 1:20.

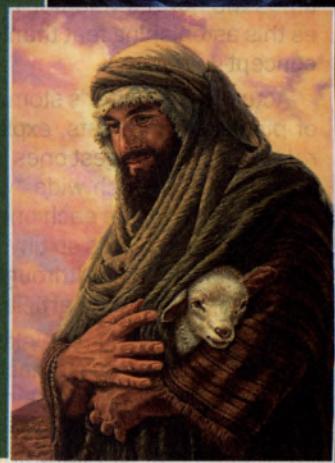


'IT REACHED INTO MY HEART'



How can you attain a close relationship with God? Many are being assisted by the publication *Draw Close to Jehovah*. For example, a woman who has been one of Jehovah's Witnesses for some 25 years states: "This book is a masterpiece." She continues: "It reached deep down into the cracks and crevices of my heart and made me feel a zeal for Jehovah that I have never felt. It has brought me closer to Jehovah, to my husband, and to the congregation."

The book *Draw Close to Jehovah* can help you too. In its prologue the book states: "God's qualities and ways, as revealed in the Bible, are a vital field of study. Pondering the way Jehovah manifests each of his qualities, seeing how Jesus Christ perfectly reflected them, and understanding how we too may cultivate them will draw us closer to God."



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