

Awake!

July 8, 2000

A dramatic, high-contrast photograph capturing a moment of intense conflict. In the foreground, a woman with long brown hair, wearing a light-colored button-down shirt, holds a small child close to her. The child's face is partially visible, looking towards the camera with a neutral expression. The woman's expression is somber. Behind them, a soldier in camouflage gear is seen from the side, aiming a heavy machine gun with a magazine inserted. The background is filled with smoke and fire, suggesting a war-torn environment. The overall mood is one of despair and the残酷 reality of war.

IS LIFE
TOO CHEAP?

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AP Photo/Laura Rausch

Is Life Too Cheap? 3-10

In recent years it seems that a "death culture" has developed among young people. What are the causes? Is there a solution?



Smile—It's Good for You! 11

Can smiling make a difference in your daily life?

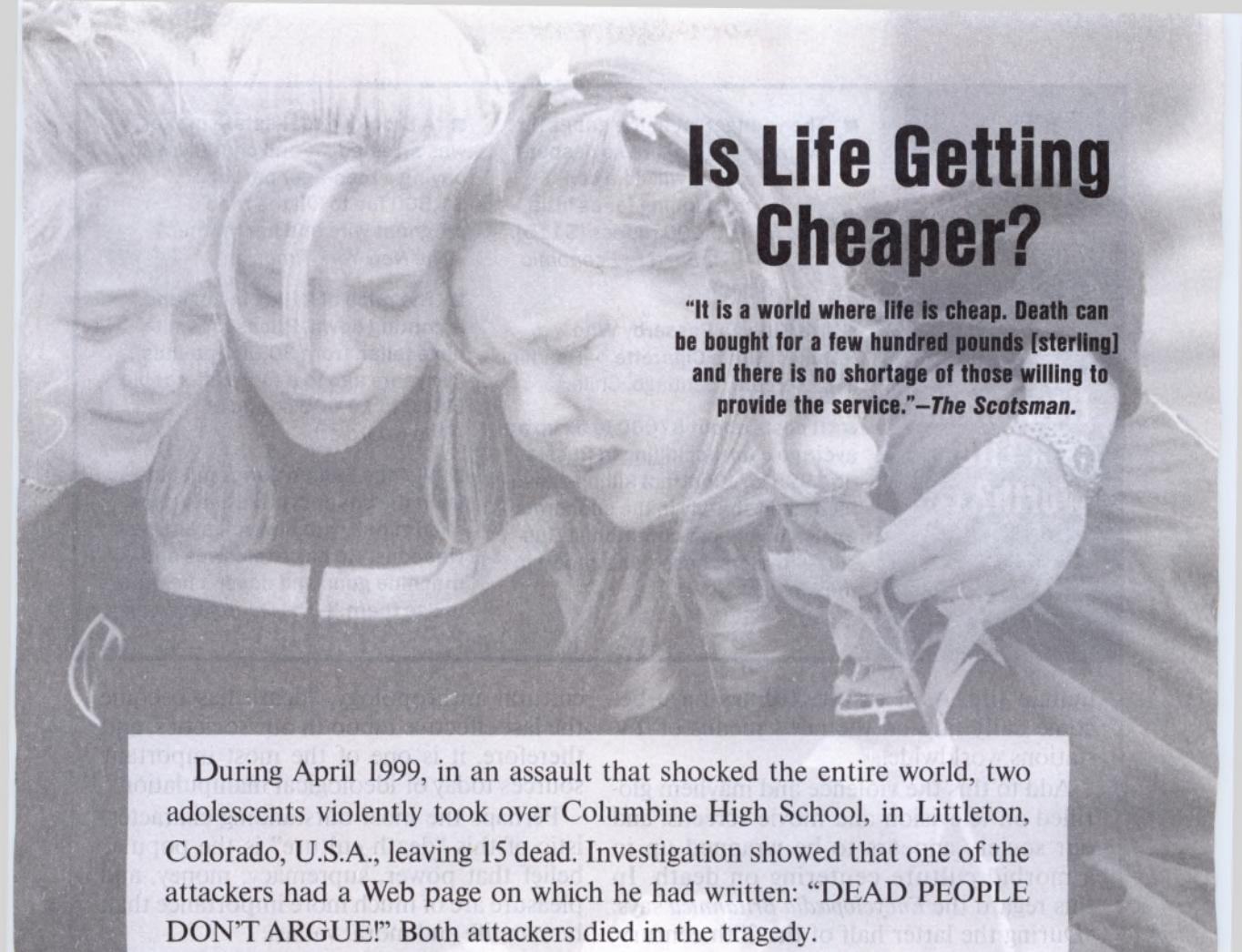


The Search for the "Immortality" Gene 20

Why do we die?
Can science really increase our life span?

Courtesy of Geron Corporation

Is Life Getting Cheaper?	3
How Is the "Death Culture" Promoted?	5
Helping Youths Escape the "Death Culture"	8
A Tale of Two Rivers	14
When Cows Go on Vacation!	18
The Lure of Santeria	23
The Bible's Viewpoint Who Is a Minister?	26
Watching the World	28
From Our Readers	30
DST—An Idea Before Its Time?	31
"I Like the Way It Treats Mammals"	32



Is Life Getting Cheaper?

"It is a world where life is cheap. Death can be bought for a few hundred pounds [sterling] and there is no shortage of those willing to provide the service."—*The Scotsman*.

During April 1999, in an assault that shocked the entire world, two adolescents violently took over Columbine High School, in Littleton, Colorado, U.S.A., leaving 15 dead. Investigation showed that one of the attackers had a Web page on which he had written: "DEAD PEOPLE DON'T ARGUE!" Both attackers died in the tragedy.

MURDER is universal, and untold numbers of people die a violent death every day. South Africa led the world with a murder rate of 75 per 100,000 inhabitants in 1995. Life is especially cheap in one South American country, where more than 6,000 were killed for political reasons in 1997. Killing by contract is a normal procedure. One report on that country states: "Shockingly, the murder of children has also soared: In 1996, 4,322 children were killed, a 40 per cent rise in just two years." However, even children are becoming murderers—of other chil-

dren and of their own parents. Life is cheap indeed.

Why the "Death Culture"?

What do these facts and figures show? An increasing lack of respect for life. Power-loving and money-hungry people kill without any qualms. Drug lords order the murder of whole families. They euphemize their killing by using such expressions as "whacking," "rubbing out," "eliminating," or "terminating" the victims of what they call hits. Genocide and ethnic cleansing have added to the toll and have cheapened the value of



How Much Is a Life Worth?

■ "The younger lot in the gangs [in Mumbai, India] are so desperate, they will do a contract killing for as little as 5,000 rupees [\$115]."
—*Far Eastern Economic Review*.

■ "He Killed a Passerby Who Refused Him a Cigarette."—Headline in *La Tercera*, Santiago, Chile.

■ "It costs about \$7000 to fix up an average contract killing in Russia [in 1995] . . . Contract killings have increased sharply in the economic explosion of post-communist Russia."—Reuters, based on a report in the *Moscow News*.

■ "A Brooklyn real-estate broker was arrested . . . and charged with paying a teen-ager part of a \$1,500 fee to kill the man's pregnant wife and her mother."—*The New York Times*.

■ 'The price of killing in England is coming down. Prices for a hit have fallen from 30,000 pounds five years ago to a more affordable 5,000 to 10,000 pounds.'—*The Guardian*.

■ 'Vicious Balkan gangs put Mafia in the shade. This is a new type of criminal, with new rules and new weapons. He has explosives and machine guns and doesn't hesitate to use them.'—*The Guardian Weekly*.

human life. As a result, killings have become daily fare on the news menus of TV stations worldwide.

Add to this the violence and mayhem glorified on television and movie screens, and our society appears to be wrapped up in a morbid culture centering on death. In this regard the *Encyclopaedia Britannica* says: "During the latter half of the 20th century, death has become a strangely popular subject. Before that time, perhaps rather surprisingly, it was a theme largely eschewed in serious scientific, and to a lesser extent, philosophical speculations." According to Josep Fericglà, a Catalonian professor of

cultural anthropology, "death has become the last effective taboo in our societies, and therefore, it is one of the most important sources today of ideological manipulation."

Perhaps the most outstanding characteristic of this "death culture" is the popular belief that power, supremacy, money, and pleasure are of much more importance than human life and moral values.

How is this "death culture" spread? What can parents do to counteract this negative influence that surrounds them and affects their children? These are some of the questions that will be answered in the following articles.

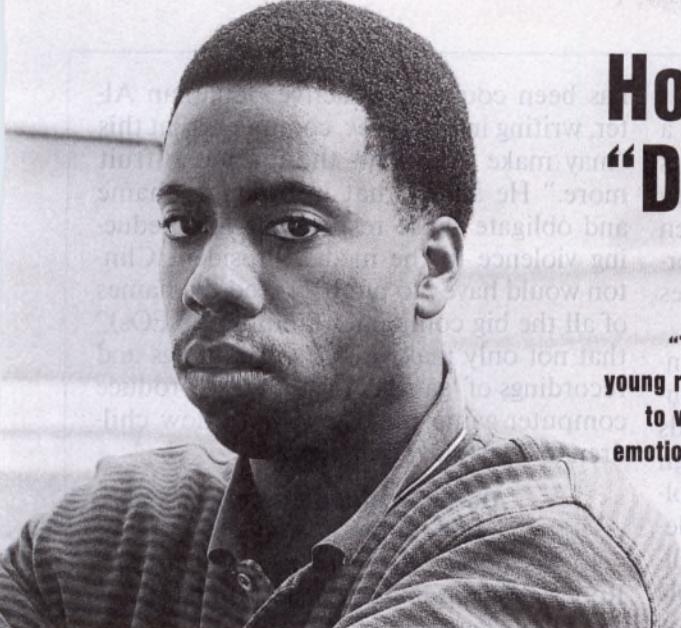
Awake!

Why Awake! Is Published *Awake!* is 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.

Unless otherwise indicated, *New World Translation of the Holy Scriptures—With References* is used.

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How Is the “Death Culture” Promoted?

“Thousands of miles lie between the traumatized young refugees of Kosovo and American children exposed to violence and other painful experiences, but the emotional distance between them may not be so great.”

—Marc Kaufman, *The Washington Post*.

Whether we like it or not, we are all affected directly or indirectly by death. This is true regardless of where we live—in a country that is racked by violent conflict or in one that enjoys relative stability.

THE manifestation of the “death culture” can be seen in the high incidence of depression, anguish, drug addiction, abortion, self-destructive behavior, suicide, and mass murder today. Professor Michael Kearl, of the Department of Sociology and Anthropology of Trinity University in San Antonio, Texas, U.S.A., explained with regard to the manipulation of the subject of death: “From our late twentieth century vantage point [1999], we find

that . . . death is becoming recognized as the central dynamism underlying the life, vitality, and structure of the social order. Death is the muse of our religions, philosophies, political ideologies, arts and medical technologies. It sells newspapers and insurance policies, invigorates the plots of our television programs, and . . . even powers our industries.” Let us examine some examples of how this phenomenon, called death culture, is manifested in our times.

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The Sale of Arms

The “death culture” is manifested on a daily basis in the sale of arms. Armaments are used to kill soldiers, but mainly they kill civilians, among them innocent women and children. In wars, whether civil or otherwise, life is always cheap. How much does the bullet of an assassin or a sniper cost?

Easy public access to arms in some countries has resulted in a terrifying and constant increase in the deaths of individuals as well as groups of people. After the high school shooting tragedy in Littleton, Colorado, protests arose because of the widespread sale of arms and their easy availability to minors. The number of young people in the United States who die violently is alarming—according to *Newsweek* magazine, an average of 40 a week. Of these, almost 90 percent are shooting victims. This is equal to 150 massacres like that at Littleton each year!

The Entertainment World

Movies exploit the subject of death. For example, the plot of a film might glamorize immorality, violence, drug trafficking, or organized crime and thus minimize the value of life and moral principles. There are films in which death is even romanticized—depicting the myth of life after death and the supposed return of some to visit the living—serving only to trivialize death.

The same is true of some television programs and music. According to news reports, the young murderers of Littleton were fervent admirers of a rock singer who has become famous for “androgyny, satanic images,” and songs with “themes of rebellion and death.”

In the United States, the way television programs are rated was revised to protect young people from seeing material that might affect them adversely. The result

has been counterproductive. Jonathan Alter, writing in *Newsweek*, comments that this “may make kids want the forbidden fruit more.” He added that in order to shame and obligate those responsible into reducing violence in the media, President Clinton would have “to publicly read the names of all the big companies (and their CEOs)” that not only make movies of knifings and recordings of ‘gangsta rap’ but also produce computer-game programs that allow children to “virtually kill people.”

Death in Video Games and on the Internet

In his book *The Deathmatch Manifesto*, Robert Waring analyzes the popularity of so-called deathmatch games among adolescents.* Mr. Waring believes that an underground society of gamers has sprung up around this phenomenon. These games really have the effect, not of educating, but of teaching to kill. “Playing with a live opponent from anywhere in the world, and trying to prove yourself, is a powerful experience. It’s really easy to get sucked into that,” Waring comments. Adolescents are trapped by the force of the three-dimensional scenarios designed as backdrops for the bloody struggles. Not having access through the Internet, some buy video-game packages to use on the television at home. Others customarily go to public places where they rent video-game machines and have ‘virtual’ fights to the death with other opponents.

Although “deathmatch” games are classified according to the age of the player, the truth is that there is very little control. Fourteen-year-old Eddie from the United States commented: “People usually tell you you’re not old enough, but they don’t stop you from buying [the game].” He enjoys one

* In “Deathmatch” games, notes this review, “players [are] driven to kill each other in three-dimensional networked games.”

that consists of shoot-out orgies. Although his parents are aware of this and do not like it, they rarely check to see if he is playing the game. One teenager reached this conclusion: "Our generation is far more desensitized to violence than any other generation. TVs raise children now more than parents do, and television caters to children's violent fantasies." John Leland, writing in *Newsweek*, stated: "With as many as 11 million teenagers now online [in the United States], more and more of adolescent life is taking place in a landscape that is inaccessible to many parents."

Life-Styles That Lead to Death

What about behavior outside the world of "deathmatch" games and violent films? Although in real life we do not have to compete in a struggle to the death with outland-

ish creatures, the life-style of many people includes self-destructive behavior. For example, in spite of family influence, health systems, and other authorities who warn about the danger involved in smoking and drug abuse, these practices continue to increase. In many cases they lead to a premature death. In order to increase illicit profits, big business and drug traffickers continue to take advantage of the anxiety, hopelessness, and spiritual poverty of the people.

Who Is Behind All of This?

Does the Bible present death as an apt subject for entertainment? Are the lifestyles that can lead us to death justified? No. For true Christians, like the apostle Paul, death is nothing less than an "enemy." (1 Corinthians 15:26) Christians do not view death as something attractive and *fun* but,

"Our generation is far more desensitized to violence than any other generation"





rather, as something against nature, a direct consequence of sin and rebellion against God. (Romans 5:12; 6:23) Death was never a part of God's original purpose for man.

Satan is said to have "the means to cause death." He is called "a manslayer," not necessarily because he produces death in a direct way, but because he does it by using

deceit, by seducing people into sin, by promoting conduct that produces corruption and death, and by fostering murderous attitudes in the minds and hearts of men, women, and even children. (Hebrews 2:14, 15; John 8:44; 2 Corinthians 11:3; James 4:1, 2) However, why are young people the principal target? What can we do to help them?

Helping Youths Escape the "Death Culture"

What accounts for the fascination with the subject of death that is seen among young people today? Representative Henry Hyde, of the state of Illinois, U.S.A., said: "There is a spiritual vacuum in these young people that is filled with the culture of death and violence."

A READER of *Time* wrote: "It's lazy parents, violent entertainment and a lack of moral and spiritual grounding that are responsible for the subculture of death that exists among our youths today."

Loneliness is another of the major problems afflicting adolescents. Some live in homes where both parents work and are absent most of the day; others have only one parent. According to one source, adolescents in the United States pass some 3.5

hours alone every day and spend 11 hours less with their parents each week than young ones did in the '60's. In fact, some young people do not have the presence or the emotional support of their parents at all.

What Parents Can Do

In view of the "spiritual vacuum" that young people contend with, how important is the role of parents? Wise parents understand that on the one hand, their children need wholesome entertainment and on



Parents should take time to really listen to their children and understand their problems

the other hand, they need regular personal support. Motivated by loving interest, parents can talk with them about their preferences in music, television programs, videos, novels, video games, and movies. Although young people may not express it, many of them crave the affection and loving guidance of their parents. They need forthright answers because they live in a world full of uncertainties. Adults should understand that children face a much more complicated world than they did as youths.

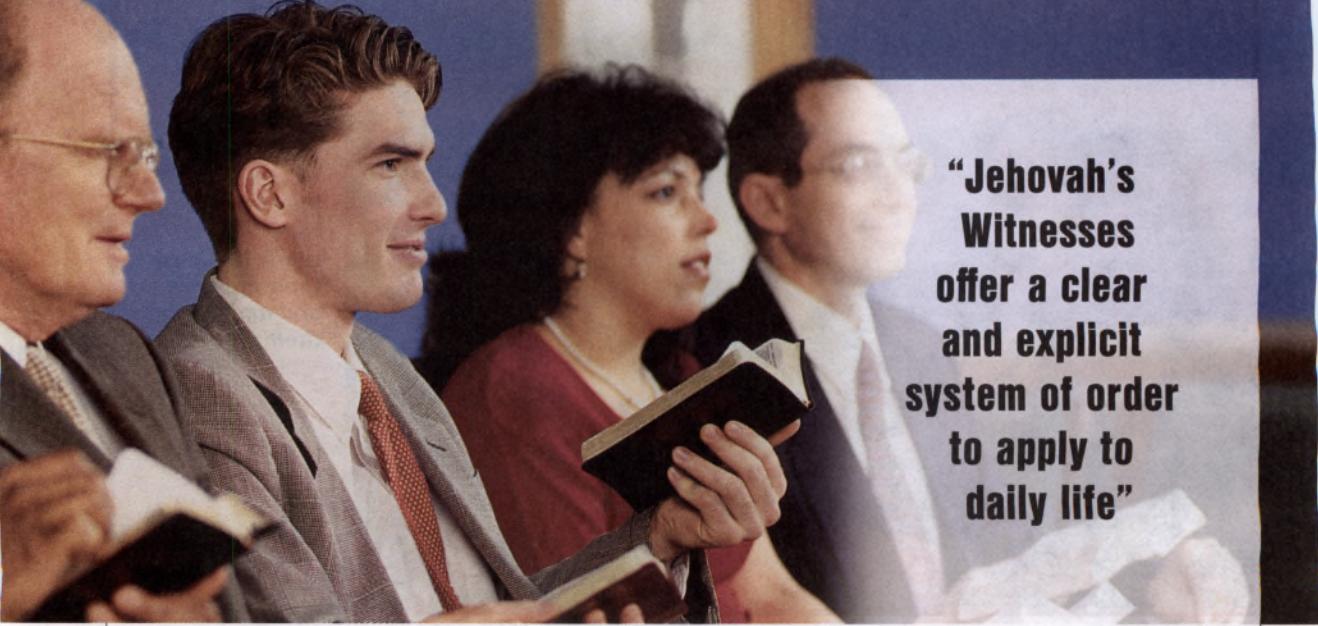
Parents who wish to protect their children *will converse* with them *regularly*, really listen to them, and warn them of the dangers involved in modern culture. When parents set firm limits and are consistent and reasonable as well as affectionate with their children, they will normally have good results.—Matthew 5:37.

Parents who are Jehovah's Witnesses make an effort to have regular discussions with their children, using the Bible and Bible-based publications and videos.* They

use such occasions, not to call their children to account, but rather to consider subjects that are spiritually upbuilding. In these family gatherings, they listen to problems or challenges that affect each of their children so that the youths have an opportunity to receive individual attention.

Young people who get no spiritual guidance from their parents can gain strength from Psalm 27:10, which says: "In case my own father and my own mother did leave me, even Jehovah himself would take me up." How does Jehovah, the Father of tender mercies, help young people? The congregations of Jehovah's Witnesses have been a refuge where many have found the affection of other people and have resolved their doubts. Josias, a young man who found that to be true, comments: "Jehovah's organization fills a vital role. I felt that life was not worthwhile. I lived without purpose, without hope. To know that one is not alone changed my life completely. I saw in the brothers in the congregation the family that I had lost. The elders and the families in the congregation are like an anchor in an emotional sense."

* The video *Young People Ask—How Can I Make Real Friends?* is produced by the Watchtower Bible and Tract Society of New York, Inc. It is presently in English and provides practical help for young people.



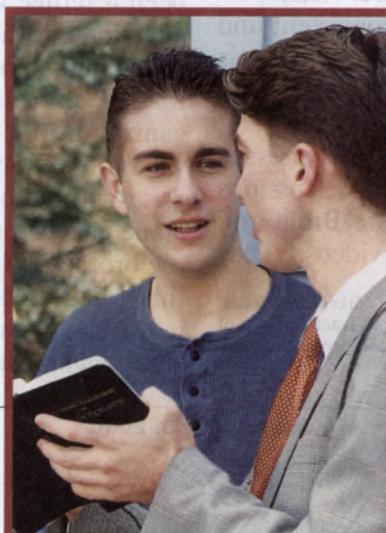
**"Jehovah's
Witnesses
offer a clear
and explicit
system of order
to apply to
daily life"**

In fact, many youths and adults have improved their mental and spiritual health by regularly attending the congregation meetings of Jehovah's Witnesses. Anthropologist Patricia Fortuny commented about this positive effect in her essay *Los Testigos de Jehová: una alternativa religiosa para enfrentar el fin del milenio* (Jehovah's Witnesses: A Religious Alternative for Facing the End of the Millennium): "Jehovah's Witnesses offer a clear and explicit system of order to apply to daily life, an exact code that serves as a guide for thinking and acting." The "system of order" and the "code" referred to here are based on the Bible. Hence, although Jehovah's Witnesses face the same problems and pressures as their neighbors, they are strengthened by the unique wisdom of that ancient book. Yes, the Witnesses find refuge in the clear doctrines and principles found in the Bible.

When "Death Will Be No More"

The teaching given in the Kingdom Halls of Jehovah's Witnesses stresses again and again God's promise of a new world that will soon begin, where "righteousness is to dwell" and where "there will be no one making them tremble." (2 Peter 3:13; Micah 4:4) Moreover, the prophet Isaiah records that then God "will actually swallow up death forever, and the Sovereign Lord Jehovah will certainly wipe the tears from all faces." Death struck the human race as a consequence of the transgression of the first man, Adam, but God's promise is that soon "death will be no more."—Isaiah 25:8; Revelation 21:3, 4; Romans 5:12.

If you are a youth looking for help, we invite you to find hope and a reason for living, through the pages of the Bible. With the help of Jehovah's Witnesses, you can have the hope that the best of times are still ahead of us in the new world that God promises.





Smile It's Good for You!

BY AWAKE! CORRESPONDENT IN JAPAN

WHEN genuine it melts away the ice of suspicion. It removes layers of prejudice accumulated through the years. It softens hearts frozen by disbelief and mistrust. It brings relief and joy to many. It says, "I understand. Don't worry." It makes the appeal, "I hope we can be friends." And what is this powerful tool? It is a smile. It can be YOUR smile.

What is a smile? A smile is generally defined in dictionaries as 'a facial expression in which the corners of the mouth curve slightly upward, expressing amusement, approval, or joy.' Herein lies the secret of the warm smile. A smile is a nonverbal way of expressing one's feelings or communicating one's emotions to others. Of course, a smile might also express scorn or disdain, but that is another subject.

Does smiling really make a difference? Well, do you remember when someone's smile brought you a sense of relief or made you feel relaxed? Or when the absence of a smile made you feel nervous or even rejected? Yes, a smile does make a difference. It affects both the one who is smiling and the one smiled at. The Bible character Job said of his adversaries: "I would smile at them—they would not believe it—and the light

of my face they would not cast down." (Job 29:24) "The light" of Job's face may have denoted his brightness or cheerfulness.

The positive effect of a smile remains true to this day. A warm smile may help relieve built-up tensions. It may prove to be like a safety valve on a pressure cooker. When we feel tense or frustrated, a smile can help us to alleviate that tension and cope with our frustration. For instance, Tomoko often observed others looking at her. She assumed that they were critical of her, as they quickly averted their eyes when they saw that she noticed them. Tomoko felt lonely and unhappy. One day a friend suggested that she smile at people when she caught their eye. Tomoko tried it for two weeks and was amazed that everyone smiled back at her! Tensions were gone. "Life has become really enjoyable," she says. Yes, a smile makes us feel



more at ease with others and helps us become more friendly.

The Good Effect on You and Others

Smiling can affect a person emotionally. It helps put one in a right frame of mind. It is good for physical health too. There is a saying, "Laughter is good medicine." In fact, medical authorities note that one's frame of mind has much to do with one's physical condition. Many studies indicate that prolonged stress, negative emotions, and the like weaken our immune system. On the other hand, smiling makes us feel good, and laughter even fortifies our immune system.

A smile has a great effect on others. Imagine a situation where you are receiving counsel or being admonished. What facial expression would you like to see on the



counselor's face? A cold or stern expression may convey anger, irritation, rejection, or even hostility. On the other hand, would not a warm smile on the counselor's face perhaps make you feel more at ease and thus more receptive to the counsel? Certainly, a smile helps to reduce misunderstandings in tense situations.

Positive Thoughts Make Smiling Easier

Of course, most of us are not like professional actors who can radiate a flashing smile at any given moment; nor do we desire to be such. We want our smiles to be natural and genuine. A communication school instructor commented: 'It is important to relax and give a heartfelt smile, or else your smile may look artificial.' How can we sincerely smile from the heart? Here the Bible can help us. Regarding our speech it tells us at Matthew 12: 34, 35: "Out of the abundance of the heart the mouth speaks. The good man out of his good treasure sends out good things, whereas the wicked man out of his wicked treasure sends out wicked things."

Remember, a smile is a nonverbal way of communicating our feelings. Bearing in mind that we speak "out of the abundance of the heart" and that "good things" come out of a "good treasure," it becomes evident that the key to a genuine smile lies in our thoughts and emotions. Yes, what is in our hearts will no doubt be expressed, sooner or later, not only by our words and deeds but also by our facial expressions. Thus, we need to continue to work on dwelling on positive thoughts. Our facial expression is strongly affected by our

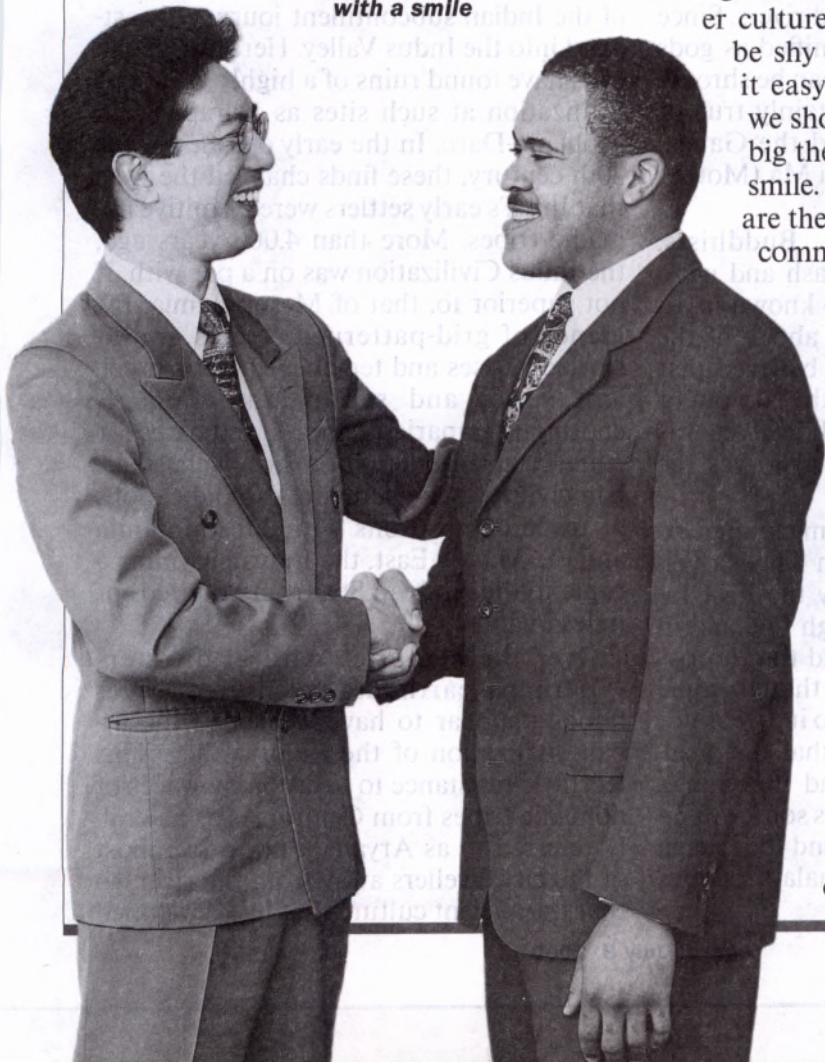
A Word of Caution

It is a sad fact that not every smile we see is genuine. Con men, swindlers, unscrupulous salespeople, and others may flash million-dollar smiles. They know that a smile can disarm people and put them off guard. People with dubious morals or unclean motives may also put on an enticing smile. Yet, their smiles are empty; they are deceptive. (Ecclesiastes 7:6) So while not being overly suspicious of others, we need to appreciate that living in "the last days," which are hard to deal with, we need to 'prove ourselves cautious as serpents and yet innocent as doves,' as Jesus himself recommended.—2 Timothy 3:1; Matthew 10:16.

thoughts about others. So let us concentrate on the finer qualities of family members, people in our neighborhood, and our good friends. We will find it much easier to smile at them. It will be a genuine smile, for behind it will be a heart filled with goodness, mercy, and kindness. Our eyes will be bright, and others will know that we really mean it.

It must be recognized, though, that because of their background or environment, some people find it more difficult

***Take the Initiative
In greeting others
with a smile***



to smile than others. Even if they are filled with goodwill for their neighbors, they are just not accustomed to smiling at them. For instance, Japanese men are traditionally expected to keep perfect composure and to maintain silence at all times. Therefore, many of them are not accustomed to smiling at those who are considered strangers. The same may be true of other cultures. Or some individuals may be shy by nature and may not find it easy to smile at others. Hence, we should not judge others by how big their smile is or how often they smile. People are different, and so are their characteristics and ways of communicating with others.

Nevertheless, if you find it challenging to smile at others, why not work at it? The Bible advises: "Let us not give up in doing what is fine . . . Let us work what is good toward all." (Galatians 6:9, 10) One way to work "what is good" to others is to smile at them—and this is within your means! So take the initiative in greeting others and giving a word of encouragement with a smile. It will be greatly appreciated. Also, you will discover that smiling becomes much easier as you develop the habit.





A Tale of Two Rivers

BY AWAKE! CORRESPONDENT IN INDIA



Two rivers that are major lifelines to the Indian subcontinent provide sustenance for hundreds of millions of people. Born not too far apart in the glacial areas of the world's highest mountain ranges, they each flow majestically more than 1,500 miles, mainly through two countries. They empty into two different seas. Each river was the cradle of an ancient civilization. Each saw the birth of a major religion. Each is appreciated by man for its gifts, and one is worshiped, even today. Their names?

The Indus and the Ganges, the latter known here in India as the Ganga.

BECAUSE mankind needs water to survive and prosper, early civilizations developed around rivers. Since rivers were sometimes personified as gods and goddesses, early records can be shrouded in mythology. This is certainly true of the history of the Indus and the Ganga, also known in India as Ganga Ma (Mother Ganga).

To both Hindus and Buddhists, 22,027-foot-high Mount Kailash and nearby Lake Mapam Yumco, also known in Tibet as Manasarovar, are the abode of the gods. For a long time, it was believed that four great rivers flowed from the lake out of the mouths of animals. The lion river was the Indus, and the peacock river was the Ganga.

The Tibetans did not welcome foreign explorers. In 1811, however, an English veterinary surgeon employed by the East India Company traveled through the land in various disguises. He reported that no rivers ran out of Manasarovar, though some mountain streams did run into it. It was not until the early 20th century that the headwaters of both the Indus and the Ganga were located. The Indus has its source in Tibet, north of the Himalayas, and the Ganga starts in an ice cave in the Himalayan slopes of northern India.

Where Ancient Civilizations Started

It is believed that the earliest inhabitants of the Indian subcontinent journeyed eastward into the Indus Valley. Here archaeologists have found ruins of a highly advanced civilization at such sites as Harappa and Mohenjo-Daro. In the early decades of the 20th century, these finds changed the view that India's early settlers were primitive nomadic tribes. More than 4,000 years ago, the Indus Civilization was on a par with, if not superior to, that of Mesopotamia. Evidence of grid-patterned streets, multi-storyed houses and tenement blocks, excellent sewer and septic-tank drainage, enormous granaries, temples, and baths for ritual cleansing all point to an advanced urban civilization. There are also indications of trade connections with Mesopotamia and the Middle East, the Indus providing a route to the Arabian Sea from hundreds of miles inland.

Over the centuries natural disasters—perhaps earthquakes or great river floods—appear to have weakened the urban civilization of the Indus Valley. This left little resistance to invasion by waves of nomadic tribes from Central Asia, generally referred to as Aryans. They drove most of the city dwellers away from the river, so that the ancient culture that had developed

around the Indus now moved to southern India, where today the Dravidian race continues as one of the major Indian ethnic groups.

Moving east through India, some Aryan tribes began to settle in the plains of the Ganga. Thus the Aryan division of the sub-continent developed its unique culture in northern India, primarily associated with the Ganga River, where it largely remains today.

Two Rivers and Two Religions

Archaeological finds show similarities between the religion practiced in the Indus Valley and that in Mesopotamia. Some relics of Hinduism, long thought to be the religion of the Aryans, have been found in the ruins of Indus cities. With the fusion of pre-Aryan and Aryan gods and religious beliefs, the Hindu religion was born. The Aryans first held the Indus as sacred, but as they moved east and settled along the Ganga, they transferred their worship to that river. As centuries passed, cities like Haridwar, Allahabad, and Varanasi developed on the Ganga. These were centered on the Hindu religion. Today millions of pilgrims flock to such centers to dip in the waters of the Ganga, which are considered to be both healing and purifying.

While Hinduism was started around the Indus, Buddhism has its roots near the Ganga. It was at Sarnath, near Varanasi, that Siddhārtha Gautama, called Buddha, preached his first sermon. It is said that he

swam across the Ganga's great width when he was 79 years old.

How Are the Rivers Today?

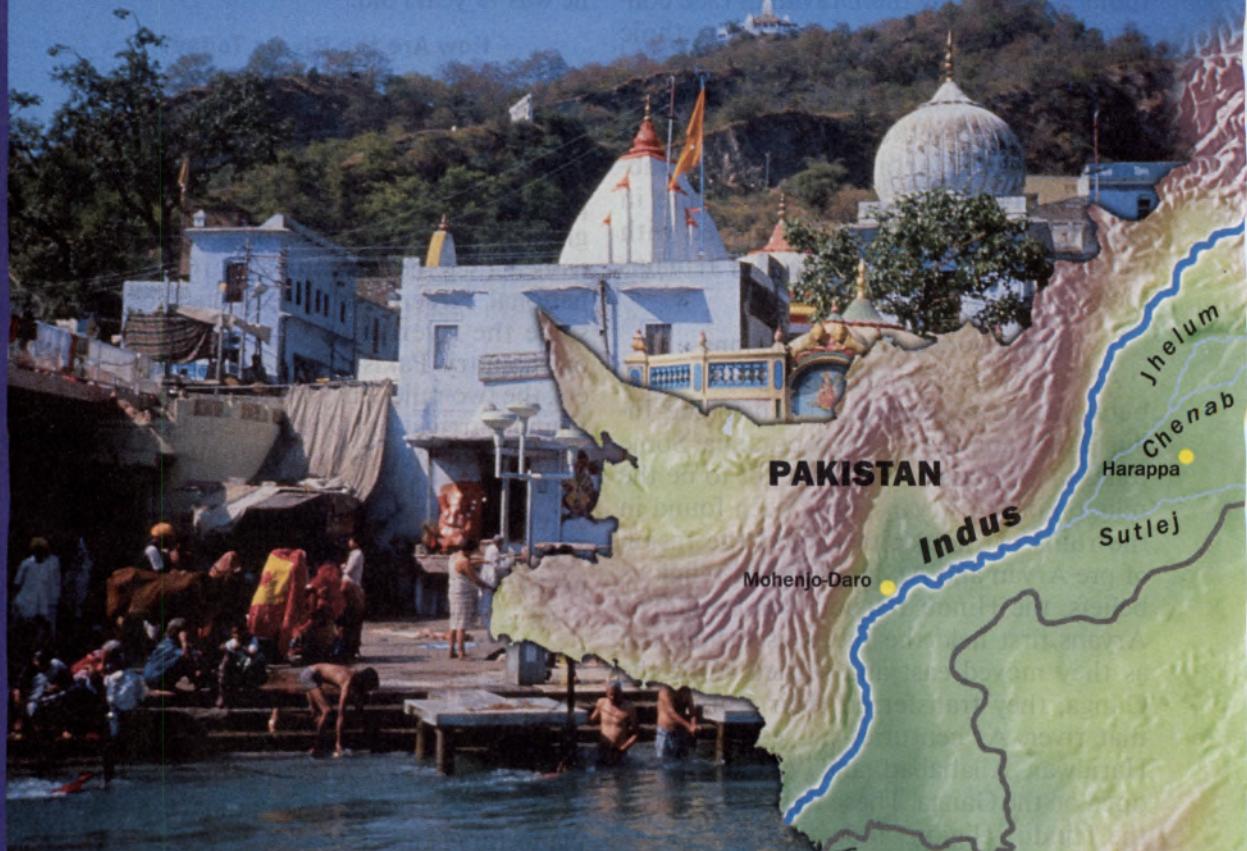
River water is more critical today than it was 4,000 years ago, when people were drawn to the banks of the Indus and the Ganga for sustenance. To support the great populations of India, Pakistan, and Bangladesh, the rivers must be carefully controlled. (See the map on pages 16-17.) International agreements have been necessary, since the rivers flow through more than one country. Pakistan has built, among others, the two-mile-long, 470-foot-high Tarbela Dam for irrigation. One of the largest in the world, it contains 194,200,000 cubic yards of earth fill. The Farakka Barrage, on the Ganga, ensures an adequate and stable supply of water to the river for the increased shipping near Calcutta Port.

As is true with many rivers, pollution is a major problem with the Ganga. Thus, in 1984 the ambitious Ganga Action Plan was set in motion by the Indian government. Attention was given to converting sewage into fertilizer or biogas, diverting drains emptying into the river, and building treatment plants for chemical wastes.

However, the problem of restoring earth's rivers to their pristine beauty and cleanliness is proving to be beyond the capacity of human agencies. But God will soon remedy the situation. Under the rule of his Kingdom, 'the rivers themselves will clap their hands' as the entire earth becomes a paradise.—Psalm 98:8.



Hindus bathe in the Ganga



The Mighty Indus

With so many streams merging to form the Indus, there has been debate about the location of the actual source of the river. But that this great river originates high up in the Himalayas is certain. Flowing in a northwesterly direction and joining other streams en route, the river runs 200 miles across the high plateau of Tibet, "the roof of the world." As the river approaches the borders of India in the Ladakh region, it works its way through the mountains, wearing into the base of cliffs to form a channel between the Himalayan and Karakoram ranges. Now in Indian territory, it drops nearly 12,000 feet in a matter of 350 miles. During this plunge it travels north and then takes a sharp turn around the western edge of the Himalayas, where it is joined by the Gilgit, a large river surging out of the Hindu Kush. The waters then flow south through Pakistan. Forcing its way between the mountains, twisting and turning with violent force, the Indus eventually reaches the plains and flows on through the Punjab. This name means "Five Rivers," as five great tributaries—the Beas, the Sutlej, the Ravi, the Jhelum, and the Chenab—flow like outspread fingers of a giant hand to join the Indus and travel with it to the end of its majestic journey of more than 1,800 miles.

The Venerated Ganga

About 60 miles south of the Himalayan source of the Indus, the Ganga begins its journey of more than 1,600 miles to the Bay of Bengal. At an altitude of over 12,700 feet, the headwaters gush from a glacial projection that resembles a cow's mouth, called Gaumukh in Hindi, forming a stream named Bhagirathi. Some 133 miles from the source, it is joined by another stream, the Alaknanda, at Devaprayag. These two streams along with the Mandakini, the Dhauliganga, and the Pindar become the Ganga.

Flowing southeast across the subcontinent, the Ganga is joined by other large rivers such as the Yamuna at Allahabad in India and then the mighty Brahmaputra in Bangladesh. Spread like a fan, the Ganga and its tributaries water one quarter of the total area of India, the fertile plains of the Ganga. The river system drains an area of 409,000 square miles and supports about a third of India's population, now more than a billion, in one of the world's most densely inhabited areas. In Bangladesh it becomes very wide, like an inland sea, with river traffic of all kinds. Then the Ganga divides into several major rivers and numerous rivulets to form one of the largest deltas in the world.

Copyright Sean Sprague/Panos Pictures





When Cows Go on Vacation!

BY AWAKE! CORRESPONDENT
IN SWITZERLAND

DID you know that thousands of cows in Switzerland go on vacation every year? You should see how much they enjoy it!

During Switzerland's cold and snowy winter months, dairy cows are sheltered in stables. What a welcome relief when spring arrives and the cows can go outdoors and graze in green meadows dotted with bright-yellow dandelions. Their occasional leaps in the air seem to express their sheer joy at the change of scene and season.

By May or early June, additional pasture grounds become available when melting snow exposes the meadows at higher altitudes. It is time for summering the cattle in the mountains.

A Land of Well-Watered Pastures

In Switzerland there are about 10,000 pasture grounds at higher altitudes, covering some 4,000 square miles. This amounts to one quarter of the country's total land area. Thus, great care is taken to protect this valuable resource.

Man and beast work together to keep the high meadows clear of brushwood and thickets. To this end, farmers entrust about 500,000 cattle to the care of professional herdsmen. Milk cows, along with heifers, are transported by truck or train for a summer vacation of grazing in the mountains.

Since the roads and railways do not reach high enough, the last leg of the journey has to be completed on foot. The herds keep moving upward as summer advances. There, sometimes in pastures between 6,000 and 7,000 feet above sea level, the cattle find sweet alpine grass and beautiful multicolored flowers. Mountain springs are plentiful, so there is no shortage of drinking water.

The fine milk produced by the cows is sometimes transported down the mountain for consumption or processing. But in most instances it is made into butter or cheese right there in mountainside cabins. As the summer days shorten, the herds are guided to lower stations. The day finally arrives—depending on the weather, it is usually toward the end of September—for the herds to return to their winter quarters. Yes, their summer vacation is nearing its end! But first a special parade is held.

The Big Day!

Production records have been kept, and the best cows are decorated according to the amount of milk they gave. The top milk producer gets to lead the herd on the march home. The cows' heads are adorned with colorful paper flowers, ribbons, and branches of small fir trees. Many carry a metal bell around the neck, announcing their approach from afar.

The herdsmen mark this special occasion by dressing up in white shirts and embroidered black velvet jackets. Meanwhile, down in the valleys, the farm population gathers along the roadside to receive the procession with a standing ovation.

Upon reaching the lowlands, the cattle are redirected to their respective owners for another winter. It won't be long, however, before it is time for another vacation in the mountains! What a life!



THE SEARCH FOR THE “IMMORTALITY” GENE

MANY civilizations have stories and fables that attempt to explain mankind's mortality. In Africa, for example, one legend has it that a chameleon was sent by God to bring immortality to mankind, but it traveled so slowly that another lizard, carrying the message of death, arrived first. Gullible mankind accepted that lizard's message and thus lost out on immortality.

Over the centuries philosophers have likewise attempted to answer the question, Why does man die? In the fourth century B.C.E., the Greek philosopher Aristotle taught that the continuation of a person's life hinged on the body's ability to balance heat and cold. He said: "It is always to some lack of heat that death is due." Plato, on the other hand, taught that man has an immortal soul that survives the death of the body.

Today, despite the amazing advances of modern science, biologists' questions about why we grow old and die remain largely unanswered. Said *The Guardian Weekly* of London: "One of the great mysteries of medical science has been not why people die of cardiovascular disease or cancer: it was why they die even when there is nothing wrong at all. If human cells divide, and go on renewing themselves by division for 70 years or so, why should they suddenly stop replicating all at once?"

In their quest to understand the aging process, geneticists and molecular biologists have turned their attention to the cell. Many scientists feel that within these microscopic units, the key to longer life can be found. Some, for instance, predict that genetic engineering will soon allow scientists to conquer cancer and heart disease. But how close is science to fulfilling mankind's dream of living forever?

Unlocking Secrets of the Cell

Previous generations of scientists attempted to unlock secrets of the cell, but they lacked the necessary tools to do so. It has only been within the last century that scientists have had the ability to peer inside a cell and observe many of its basic components. What have they found? "The cell," says science writer Rick Gore, "has turned out to be a microuniverse."

To get some idea of the enormous complexity of a cell, consider that each one is made up of trillions of much smaller units called molecules. Yet, when scientists observe the structure of a cell, they find tremendous order and evidence of design. Philip Hanawalt, assistant professor of genetics and molecular biology at Stanford University, says: "The normal growth of even the simplest living cell requires that tens of thousands of chemical reactions occur in coordinated fashion." He also states: "The

programmed accomplishments of these tiny chemical factories go far beyond the capabilities of the scientist in his laboratory.”

Imagine, then, the daunting task of trying to extend the human life span through biological means. It would require not only a deep understanding of the basic building blocks of life but also the ability to manipulate those building blocks! Let us take a brief look inside a human cell to illustrate the challenge facing biologists.

It's All in the Genes

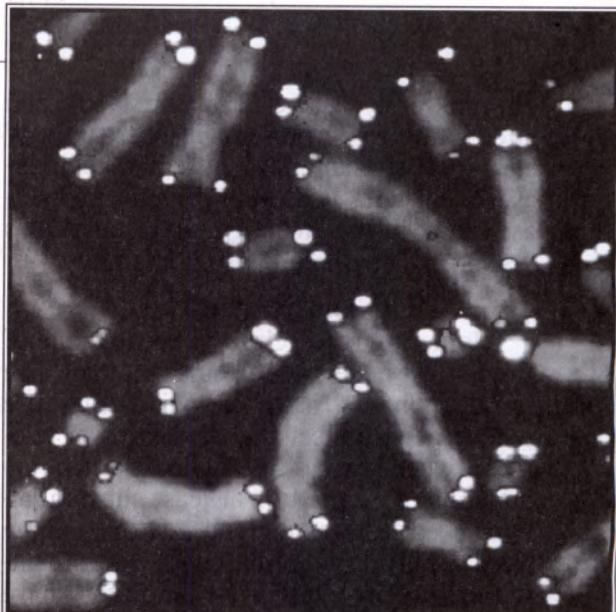
Within each cell is a complex control center called a nucleus. The nucleus directs the cell's activities by following a set of coded instructions. These instructions are stored in the chromosomes.

Our chromosomes consist primarily of protein and deoxyribonucleic acid, or DNA for short.* Although scientists have known about DNA since the late 1860's, it was not until 1953 that its molecular structure was finally understood. Even then, it took nearly a decade more before biologists began to understand the “language” DNA molecules use to carry genetic information.—See the box, page 22.

In the 1930's, geneticists found that at the tip of each chromosome is a short sequence of DNA that helps to stabilize the chromosome. Named telomeres, from the Greek *te-llos* (end) and *me'ros* (part), these snippets of DNA act much like the protective end cap on a shoelace. Without telomeres, our chromosomes would tend to unravel and break into short segments, stick to one another, or otherwise become unstable.

Researchers later observed, however, that in most types of cells, the telomeres became shorter after each successive division. Thus, after 50 or so divisions, the cell's telomeres were whittled down to tiny nubs, and the

* For a detailed description of DNA, see *Awake!*, September 8, 1999, pages 5-10.



The tips on chromosomes (shown here glowing) allow cells to keep dividing

Courtesy of Geron Corporation

cell stopped dividing and eventually died. The observation that cells appear to be limited to a finite number of divisions before they die was first reported in the 1960's by Dr. Leonard Hayflick. Hence, the phenomenon is now referred to by many scientists as the Hayflick limit.

Did Dr. Hayflick discover the key to cellular aging? Some thought so. In 1975 the *Nature/Science Annual* said that the avant-garde in the field of aging believed that “all living creatures carry around within themselves a precisely timed self-destruct mechanism, a clock of aging that ticks away vitality.” Indeed, hope began to grow that scientists were finally beginning to zero in on the aging process itself.

In the 1990's, researchers studying human cancer cells discovered another important clue regarding this “cellular clock.” They found that malignant cells somehow learned how to override their “cellular clock” and divide indefinitely. This discovery led biologists back to a most unusual

enzyme, first discovered in the 1980's and later found to be present in most types of cancer cells. That enzyme is called telomerase. What does it do? Simply put, telomerase can be likened to a key that resets a cell's "clock" by lengthening its telomeres.

End to Aging?

Telomerase research soon became one of the hottest fields in molecular biology. The implication was that if biologists could use telomerase to offset the shortening of telomeres when normal cells divide, perhaps aging could be halted or at least substantially delayed. Interestingly, *Geron Corporation News* reports that researchers experimenting with telomerase in the laboratory have already demonstrated that normal human cells can be altered to have "an infinite replicative capacity."

In spite of such progress, there is little reason to expect that in the near future, biologists will appreciably extend our life span with telomerase. Why not? One reason is that aging involves much more than deteriori-

rating telomeres. Consider, for instance, the comments of Dr. Michael Fossel, author of the book *Reversing Human Aging*: "If we conquer aging as we know it today, we will still age in some new, less familiar way. If we extend our telomeres indefinitely, we may not acquire the diseases we now associate with old age, but we will still eventually wear out and die."

Indeed, there are likely a number of biological factors that contribute to the aging process. But the answers at present remain locked up beyond the reach of scientists. Leonard Guarente of the Massachusetts Institute of Technology says: "Right now aging is still very much a black box."—*Scientific American*, Fall 1999.

While biologists and geneticists continue to probe the cell to understand why mankind grows old and dies, God's Word reveals the real reason. It simply states: "Through one man sin entered into the world and death through sin, and thus death spread to all men because they had all sinned." (Romans 5:12)

Yes, human death results from a condition that science will never be able to cure— inherited sin.—1 Corinthians 15:22.

On the other hand, our Creator promises to undo the effects of inherited sin by means of Christ's ransom sacrifice. (Romans 6:23) We can be certain that our Creator knows how to reverse aging and death, for Psalm 139:16 says: "Your eyes saw even the embryo of me, and in your book all its parts were down in writing." To be sure, Jehovah God originated the genetic code and put it down in writing, as it were. Thus, in his due time, he will see to it that our genes permit everlasting life for those who are obedient to his requirements.—Psalm 37:29; Revelation 21:3, 4.

THE "LANGUAGE" OF DNA

The basic units, or "letters," of the DNA language are chemical components called bases. There are four types of bases: thymine, adenine, guanine, and cytosine, usually abbreviated T, A, G, and C. "Think of those four bases as letters in a four-letter alphabet," says *National Geographic* magazine. "Just as we arrange the letters of our alphabet into meaningful words, the A's, T's, G's, and C's that make up our genes are arranged into three-letter 'words' comprehensible to the machinery of the cell." In turn, genetic "words" form "sentences" that tell the cell how to manufacture a particular protein. The order in which the DNA letters are strung together determines whether the protein will function as an enzyme that helps you to digest your supper, an antibody that wards off an infection, or any of the thousands of proteins that are found within your body. Little wonder that the book *The Cell* refers to DNA as "the basic blueprint of life."

THE LURE OF Santeria

BY AWAKE! CORRESPONDENT IN MEXICO

SANTERIA has been a prominent religion in Cuba for many years. However, this form of worship has been gradually introduced to other countries. For instance, one of the main marketplaces in downtown Mexico City features shops that specialize in Santeria paraphernalia, such as crosses, candles, amulets, and fetishes. Most of these shops are known as botanicas, and they can be found in other large cities of the Americas. In New York City, botanicas are well advertised in the telephone book, having far more listings in the yellow pages than other religious stores.

Many people are attracted by the mysticism and exotic aura of Santeria. Elements of Santeria can be found in some popular Latin music and literature. Santeria is becoming more secular and cultural than religious, and it has been spread through Afro-Caribbean music and cultural events.

Origins in Ancient Africa

Santeria has the basic features and traditions of an ancient African re-

ligion practiced among the Yoruba in Nigeria. When Yoruba were taken to the Caribbean islands as slaves between the 1770's and the 1840's, they took their religion with them. Once in the New World, these Africans in bondage were forced to accept Catholicism, but they refused to give up their traditions completely. So they created a new form of worship with elements taken from both religions. Such a merging of religious practices is called syncretism.

In an effort to worship according to their ancient beliefs, the slaves gave Catholic saints dual identities, each one corresponding to an African god with particular characteristics and powers. Thus, African gods and goddesses, called orisha, took on the names and forms of Catholic saints. However, the rituals, customs, and beliefs remained the same as those practiced in Africa. A Santeria priest in Cuba explains: "Syncretism allows us to worship the Catholic god on the altar, but what we see is the African god behind it."

Religions such as voodoo, Obeah, and macumba are also made up of elements from Roman Catholic



liturgy, sacraments, and sacred paraphernalia blended with spiritistic practices from Africa. Because from the beginning the Catholic Church in Latin America prohibited African religions, Santeria had to be practiced in secrecy for a long time. Eventually the Catholic Church came to tolerate this syncretism among the slaves.

Characteristics of Santeria

What are the characteristics of this religious worship? Santeros, as the practitioners of Santeria are now called, worship one supreme being and a group of deities, or orisha, that form the Yoruba pantheon. The orisha's will is interpreted by Santeria priests through divination. It is said that sometimes orisha possess the worshipers in order to voice their counsel. Followers can appeal to the orisha through prayers, music, proper behavior, and offerings. Altars play an important role in the worship; santeros set them up in their homes and put flowers, rum, cake, and cigars on them to keep the deities happy and helpful.

Lizette Alvarez explained in a *New York Times* article about Santeria philosophy:

"The religion emphasizes the here and now rather than the afterlife, and it focuses on natural forces. Each deity represents an aspect of nature, like thunder, and a human characteristic, like power." Santeria priests help people to resolve day-to-day problems by consulting the orisha. These are not Catholic priests, and their ordinary Santeria rituals are held in homes rather than temples.

People in need of emotional and economic support are especially drawn to Santeria because it offers a sense of community, an extended family. The ones most attracted are the deprived and also immigrants who move to countries where Santeria is practiced. Followers belong to a specific community with a male or female santero serving as godparent, counselor, and priest for the community. New members are initiated by priests in a ceremony that includes music, dances, and animal sacrifices. Animals are also sacrificed to celebrate births, marriages, and deaths. Chickens, goats, doves, pigeons, and turtles are among the animals used.

Santeria paraphernalia on display in a botanica



The Music of Santeria

Music plays an important role as a regular feature of worship in Santeria. Music is used during *bembés*, or ceremonies in which drums are beaten to invoke the deities. Specific rhythms are played to summon a particular god. The sound is so loud that the insistent rhythm of the drums can be heard blocks away.

Percussion instruments such as drums and xylophones, or marimbas, have been cult instruments in West Africa for centuries. That was their prevailing significance when slaves brought them to America. In Brazil, membranes for sacred drums are made from the skins of ritually sacrificed animals, and new instruments are customarily baptized, preferably with “holy” water from a Catholic Church. Other drums represent a certain deity, such as in the Afro-Caribbean culture of Haiti.

It is not unusual to find on the market compact discs of sacred music for Santeria, openly referred to as such. Drums are the main instrument in the rhythms, and some pieces have titles that are actually names of Santeria deities or of customs of the religion. Over time, these rhythms have also in-

filtrated some Latin music. Santeria terminology has been included in some musical pieces.

What the Bible Says

Santeria is closely connected with spiritism, a form of worship condemned in the Bible. (Leviticus 19:31) God’s Word lists the “practice of spiritism” among “the works of the flesh,” which bar a person from inheriting God’s Kingdom. (Galatians 5:19-21) The Scriptures also command those desiring God’s approval to “flee from idolatry” and to “worship the Father with spirit and truth.”—1 Corinthians 10:14; John 4:23, 24.

Christians should be alert to the fact that Santeria practices and music are becoming more secular in nature. Various forms of entertainment and some aspects of Latin-American culture are laced with elements of Santeria. These are becoming more popular and are widely regarded as harmless. Nevertheless, Christians do well to avoid anything that is in direct conflict with Bible principles regardless of how popular it is or how harmless it seems to be.—2 Corinthians 6:14-18.

TERMS USED IN SANTERIA

Babalú-aye: God of healing worshiped as “Saint” Lazaro.

Changó: God of fire, thunder, and lightning and also patron of artillery, worshiped as “Saint” Barbara in the Catholic faith.

Ifa Corpus: System of laws expressed in 256 symbols that represent the Santeria tradition.

Ikole orun: The “heaven” where all humans go when they die. However, bad people live in hell on earth and suffer in ikole orun.

Obatalá: A god who created human life and consciousness out of the substance of the earth.

Ochún: Goddess of rivers, love, marriage, money, joy, and abundance, who doubles as the Virgin de la Caridad, patron saint of Cuba.

Oggún: Patron god of miners and workers, worshiped as “Saint” Peter.

Oloddumare: The supreme being, who created the universe.

Orumila: A god that decides an individual’s fate.

Yemayá, or Xemayá: Goddess of the seas and of fertility, who is identified with the Virgin Mary, or the Virgen de Regla in Cuba.



Who Is a Minister?

ON THE eve of Jesus' sacrificial death, his closest friends got involved in a heated argument. According to Luke 22:24, there "arose a heated dispute among them over which one of them seemed to be greatest." This was not the first time that such an argument had erupted among Jesus' apostles. On at least two previous occasions, Jesus had to correct their thinking.

How sad that on this critical night, Jesus found himself having to remind them again what a Christian minister should truly be. He said: "Let him that is the greatest among you become as the youngest, and the one acting as chief as the one ministering." —Luke 22:26.

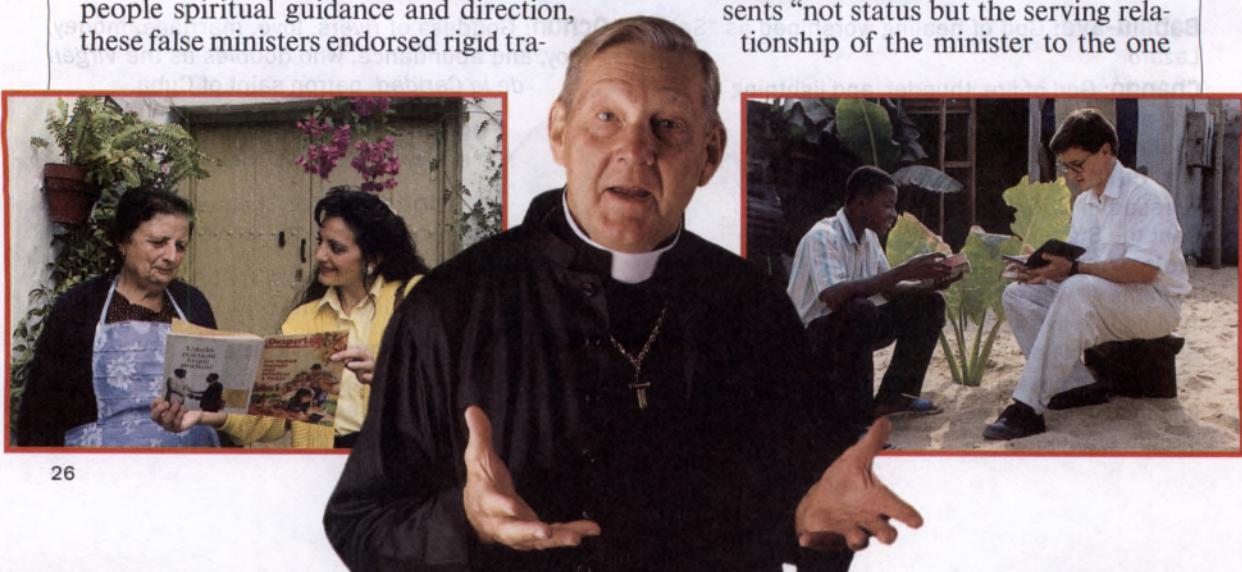
It should not surprise us that the apostles had an erroneous idea about the importance of position and prominence. Prior to Jesus, their principal example in the matter of religious leadership had been provided by the scribes and Pharisees. Instead of giving people spiritual guidance and direction, these false ministers endorsed rigid tra-

ditions and rules that "shut up the kingdom of the heavens before men." They were position-oriented, prominence-seeking, self-centered individuals who performed their works "to be viewed by men."—Matthew 23:4, 5, 13.

A New Type of Minister

Jesus, however, introduced a new concept of spiritual ministry to his disciples. He taught: "Do not you be called Rabbi, for one is your teacher, whereas all you are brothers. Moreover, do not call anyone your father on earth, for one is your Father, the heavenly One. . . . But the greatest one among you must be your minister." (Matthew 23:8-11) Jesus' disciples were not to imitate the religious leaders of their day. If they wanted to be genuine ministers, they had to imitate Jesus. What kind of example did he leave?

The Bible often uses the Greek word *diakono-s* for "minister." *The Encyclopedia of Religion* explains that this word represents "not status but the serving relationship of the minister to the one



served: following the example of Christ . . . is at the heart of the Christian understanding of ministry."

In harmony with the correct definition of the word "minister," Jesus spent himself giving to others. "The Son of man came," he explained patiently, "not to be ministered to, but to minister and to give his soul a ransom in exchange for many." (Matthew 20:28) Jesus unselfishly used his time, energy, and ability to help others physically and spiritually. Why? Because he felt pity for the spiritually abused crowds that flocked to see him. He wanted to help. Generous love is what motivated his ministry, and he wanted his disciples to display the same giving attitude.

—Matthew 9:36.

Through his life course, Jesus set the pattern for future ministers. "The harvest is great," he said, "but the workers are few. Therefore, beg the Master of the harvest to send out workers into his harvest." (Matthew 9:37, 38) Yes, Christ's ministers were to be workers in the greatest work the world has ever seen—providing spiritual comfort to all mankind by preaching and teaching the good news of God's Kingdom.—Matthew 28:19, 20.

This focus on giving and on serving the needs of others is what made Christ's approach to ministering so distinctive. He taught his ministers to be laborers, spiritual fishermen and shepherds, not mystics and academics in special garb and regalia.—Matthew 4:19; 23:5; John 21:15-17.

The Bible's View

Sadly, over the centuries this elevated, selfless concept of ministers as self-sacrificing preachers and teachers was distorted. What began as the Christian ministry evolved into a formal, hierarchical institution. Orders and ranks were formed, and they were invested with prestige and power and often accumulated great wealth. This created divisions. A clergy class developed

that was mostly devoted to administering religious sacraments and counseling the errant. First-century Christianity changed in succeeding centuries from an active religion where everyone was a minister to a passive one where only a handful of specially trained and accredited individuals could preach and teach.

However, the Bible identifies a Christian minister, not by distinctive garb, elaborate ritual, a salary, or state decree, but by his unselfish labor. The apostle Paul outlined the attitude Christian ministers should display. He encouraged them to do 'nothing out of egotism but with lowliness of mind.'—Philippians 2:3.

Paul certainly practiced what he preached. Adhering closely to Christ's pattern, he never sought his "own advantage but that of the many, in order that they might get saved." He understood and keenly felt his responsibility to "furnish the good news without cost," as he said, "to the end that I may not abuse my authority in the good news." He was not "seeking glory from men."—1 Corinthians 9:16-18; 10:33; 1 Thessalonians 2:6.

What an outstanding model of a true Christian minister! Those who imitate his excellent example and walk in the selfless pattern set by Jesus Christ, giving of themselves freely to provide spiritual help and the comfort of the good news to others, show themselves to be true ministers of God.

—1 Peter 2:21.

IN OUR NEXT ISSUE

Spiritism—Helpful or Harmful?

Antarctica—The Last Frontier

Is It Time for a New Bed?

WATCHING THE WORLD

Mars Spacecraft Problems

In December, NASA was unable to reestablish contact with its Mars Polar Lander after the spacecraft entered the Martian atmosphere. The failure occurred only about two months after the failure of the Mars Climate Orbiter, which was to help relay information from the lander to Earth. Why the lander failed is unknown. But the orbiter went astray, among other reasons, because the spacecraft's navigation commands were in English units of measurement rather than in the more widely used metric system! This difference prevented navigation data from being transferred properly. Although disappointed at their losses, NASA scientists intend to continue pursuing their goals, says CNN. These are "to learn about the red planet's climatic and geologic history; to look for signs of life; and to lay the groundwork for manned exploration."

A Vanishing Chinese Writing System

A unique writing system called Nu Shu, understood only by women, has been used for centuries in a cluster of small villages in Hunan Province, southern China. It was developed by peasant women at a time when girls were denied formal education. Its script consists of an estimated 700 phonetic characters, compared with the thousands of Chinese ideographic characters. Nu Shu is written with delicate curved and tilted lines, which Yang

Yueqing, a filmmaker who documented Nu Shu, describes as "very feminine and beautiful, . . . also extremely graphic because it was woven into cloth and embroidered as patterns," reports *The Sunday Times* of London. The women recorded folk traditions and expressed their lot in life in songs and poems written in Nu Shu. After women were granted equality in China in 1949, the use of Nu Shu began to decline. Today, only three people are known to write the ancient script, and they are female senior citizens.

Violent Video Games



Based on a study of 600 young video-game players, researcher Brent Stafford, of Simon Fraser University in British Columbia, Canada, warns that many games "are training our kids to celebrate violence." *Maclean's* magazine reports: "Some hard-core players who prefer the most violent and realistic games 'kill' as many as 1,000 'avatars' (on-screen characters) in a single night, often in scenes of gory realism." The research documented the extent to which violent video games are designed to appeal to a player's emotions and to "engulf young minds in worlds that desensitize them to violence, even

killing." The video-game industry, at \$17 billion a year, is "bigger than film and television combined." Stafford urges parents to know what games their children are playing and to be alert to any tendency toward compulsion.

Reports of Wars

"There are now 27 active wars worldwide," states *Psychology Today*. As reported by the Stockholm International Peace Research Institute, over 150,000 Liberians perished in their 7-year civil war, and 500,000 people have died in the 15-year civil conflict in Angola. Clashes in Turkey have killed more than 37,000 since 1984, and war in Sri Lanka has claimed some 60,000 lives since 1983. "In all, more than 20 million people—most of them civilians—have died in war since the end of World War II," the magazine states. "War may continue to be inevitable . . . because of economics. War is one [of] the largest industries on earth, to the tune of \$800 billion in expenditures per year, and it also brings enormous spoils." The editorial notes: "What an odd, odd species we are to be so brutal to our own kind." The United Nations has declared this year to be an international year of peace.

Smoking and Blindness

"Smoking is a major cause of blindness," reports the *Canberra Times* newspaper. Researchers at the Australian National University and Sydney University estimate that 20 percent of all blindness in Australia

lians over 50 years of age is due to smoking. The researchers cited studies from Australia, the United States, and Europe that indicate that smokers are two to five times as likely to develop age-related macular degeneration as nonsmokers. Dr. Wayne Smith of the Australian National University suggested that cigarette packs bear the warning: "Smoking is a major cause of blindness."

Neglect and Child Abuse

Reported cases of child abuse in Japan soared 30 percent during fiscal 1998, compared with the previous year, says *Asahi Evening News*. Experts attribute this to "mounting stress borne by mothers, many of whom were carrying the entire burden of rearing their children," as well as to "a heightened awareness among the general public" of their responsibility to report abuse or neglect. *The Daily Yomiuri* mentions that Japan has also seen an increase in the number of deaths of small children who were left alone at home or in parked cars. In some cases their absent parents were gambling at pachinko pinball machines. Until recently, few parents were held criminally responsible in such cases. Now, however, authorities intend to step up prosecution of seriously negligent parents.

Newborns With HIV

"Half of all babies in Africa are born infected with HIV the virus that develops into AIDS," reports United Press International. Dr. Peter Piot, executive director of the Joint United Nations Programme on HIV/AIDS, stat-

ed that HIV and AIDS have shortened life expectancy by 25 years in some parts of Africa. The report adds: "The 21 countries with the highest incidence of HIV infection are all in Africa, and in 10 of those countries, at least 10 percent of the population is infected." Of all AIDS-related deaths worldwide, about 80 percent have occurred in Africa.

Pedal Power



"One of the most energy-efficient ways to get around may be a bicycle—not only because it uses pedal-power but because its design wastes very little energy," says a Reuters report. Checking a computer-controlled bicycle driveline by means of an infrared camera, engineers at Johns Hopkins University in Baltimore noted that little heat was generated as the chain moved. "To their surprise, the engineers found the chain drive had an energy efficiency score of 98.6 percent, meaning less than 2 percent of the power used to turn the front sprocket was lost as heat," the report said. "The worst the bicycle scored, under varying conditions, was 81 percent efficiency." James Spicer, who led the study, said: "This was amazing to me, especially when you realize the essential construction of this chain drive hasn't changed in more than 100 years."

"Evil Rain"

A natural phenomenon known as evil rain occurs in Turpan, in the Sinkiang Uighur Autonomous Region of China. Even as dark rain clouds pass overhead, the weather may remain hot and dry on the ground, reports *China Today*. Rain appears to be falling from the sky, and a person can even feel the rain by waving his hand up in the air. However, in the extremely arid climate of Turpan, evaporation takes place at a much faster rate than the rain falls. Thus, the "evil rain" evaporates before it ever reaches the ground.

Deadly Diet

A veterinary surgeon in the Kutch district of western India recently removed 100 pounds of plastic bags from the stomach of a sick cow, reports *The Week*, a magazine of Kerala, India. Besides the bags, he also found cloth, coconut husks, a coil of wire, and a screw. Stray cows in India subsist mainly on garbage, and discarded plastic bags are dangerous for them. Even privately owned milk cows often eat roadside garbage when moving to their grazing areas. The veterinarian, Dr. Jadeja, says that consumption of plastic is second only to foot-and-mouth disease as a problem for the cows. The indigestible material blocks the abdomen, so that the cow cannot chew the cud. Such cows are often left to die. Dr. Jadeja was alerted to the situation by cobblers who found masses of plastic in the stomachs of dead cows when removing their hides.

FROM OUR READERS

Global Trade I want to thank you very much for the clear information presented in the article "Global Trade—How It Affects You." (September 8, 1999) Now I better understand why there is a gulf between rich and poor nations.

M. Z., Italy

I am studying economics in college and have just finished the topic of international trade. Your article had points that we did not discuss in class. I will use them in my exam next month.

H. N., Zimbabwe

Wrong Laser? The item in "Watching the World" called "Pain-Free Dentist?" (October 22, 1999) spoke of the use of the "erbium:YAG laser for dental surgery." Should this have read "neodymium:YAG"?

D. B., Canada

Although the Academy of Laser Dentistry describes the neodymium:YAG laser as "the most commonly used wavelength in dentistry," an article in "The Journal of the American Dental Association" (August 1997, Volume 128, pages 1080-7) mentions the use of the erbium:YAG laser as "FDA Consumer" described.—ED.

Crossword Puzzle Regarding the crossword puzzles, couldn't you post the completed answers in the following issue? I always read the magazine first and do the puzzle later, and it is hard to read the page on which the answers appear without glancing at it.

J. L., United States

We appreciate the suggestion. However, since "Awake!" is distributed from door to door, many of our readers do not get successive issues. So we feel it best to keep the answers in the same issue. Try not to peek at them in advance!—ED.

Witchcraft I am 13 years old, and I met a girl at school who believes in the practice of witchcraft. One day she asked me what I thought about it. I told her that I am one of Jehovah's Witnesses and that I don't believe in using occult powers. She was upset and has brought the matter up many times since then. I prayed to Jehovah for help, and it came in the form of the article "The Bible's Viewpoint: What Is Behind Witchcraft?" (November 8, 1999) I gave her the article, and since reading it, she hasn't questioned the way I feel on the subject.

K. E., United States

Stinking Delicacy Thank you for the article "Surströmming—A Stinking Delicacy." (July 8, 1999) We had never heard of it before, so we spoke to a fellow believer who comes from Sweden. She described this delicacy in glowing terms and surprised us some time later by giving us two tins of it. A group of us from the local congregation decided to enjoy it together. Heeding the warning in the article, we opened the tins outside in the garden. Good thing we did. The smell exceeded even our wildest expectations! It was impossible for us to make an objective assessment of the taste! But thanks for the article, without which we would never have had such an unforgettable experience.

C. B., Germany

RSD It has taken me two years to write to express my thanks for the article "RSD—A Puzzling, Painful Disorder." (September 8, 1997) I had never heard of the disorder until I found out that I have it in my left arm. My physical therapist said that she learned more from the article than from her studies in college. Anyway, thanks for the article. It has really helped me to cope.

L.M.K., United States

DST

An Idea Before Its Time?

Why do many people have to reset their clocks twice a year? It's a real hassle for some when clocks have to be adjusted forward and backward. And when do you do which? In English the phrase "spring forward and fall back" reminds people when each change takes place, in the spring and the fall. How did daylight saving time (DST) come about? Who started it?

The *Encyclopædia Britannica* says that Benjamin Franklin first suggested the idea of saving daylight in 1784. More than a century later, an Englishman named William Willett actively campaigned for it. However, Willett died before a law was enacted in Parliament.

According to British writer Tony Francis, Willett, a master builder from Chislehurst, Kent, struck on the usefulness of a time manipulation as he was riding his horse early one summer morning in Petts Wood. During the ride he noticed many homes with their window shutters closed. 'What a waste of daylight!' he must have thought. He started to campaign for a bill in the British Parliament to get the clock adjusted. Simply putting all the clocks forward 80 minutes, in four increments of 20 minutes each, during the spring and summer months and then back in the autumn would have allowed people to have more daylight in the evening.

Francis reports that Willett wrote in one of his leaflets: "Light is one of the greatest gifts of the Creator to man. While daylight surrounds us, cheerfulness reigns, anxieties press less heavily and courage is bred for the struggle of life."

King Edward VII did not wait for an act of Parliament. He declared Sandringham, his royal mansion with 19,500 acres, a daylight saving zone. He later applied the same change to the royal estates at Windsor and Balmoral.

What finally persuaded the politicians to give in and adopt DST? They wanted to conserve fuel during World War I by reducing the need for artificial light! Other countries soon took up the idea for similar reasons. Even double summer time was adopted in England during World War II. This allowed for a difference of two hours in the summer and one hour in the winter.

There is a monument in Petts Wood to William Willett, pictured at the right. It is dedicated to "the untiring advocate of 'summer time.'" The inscription beneath the sundial says: "*Horas non numero nisi aestivas*," which means, "I don't count hours unless [they are] summer hours."

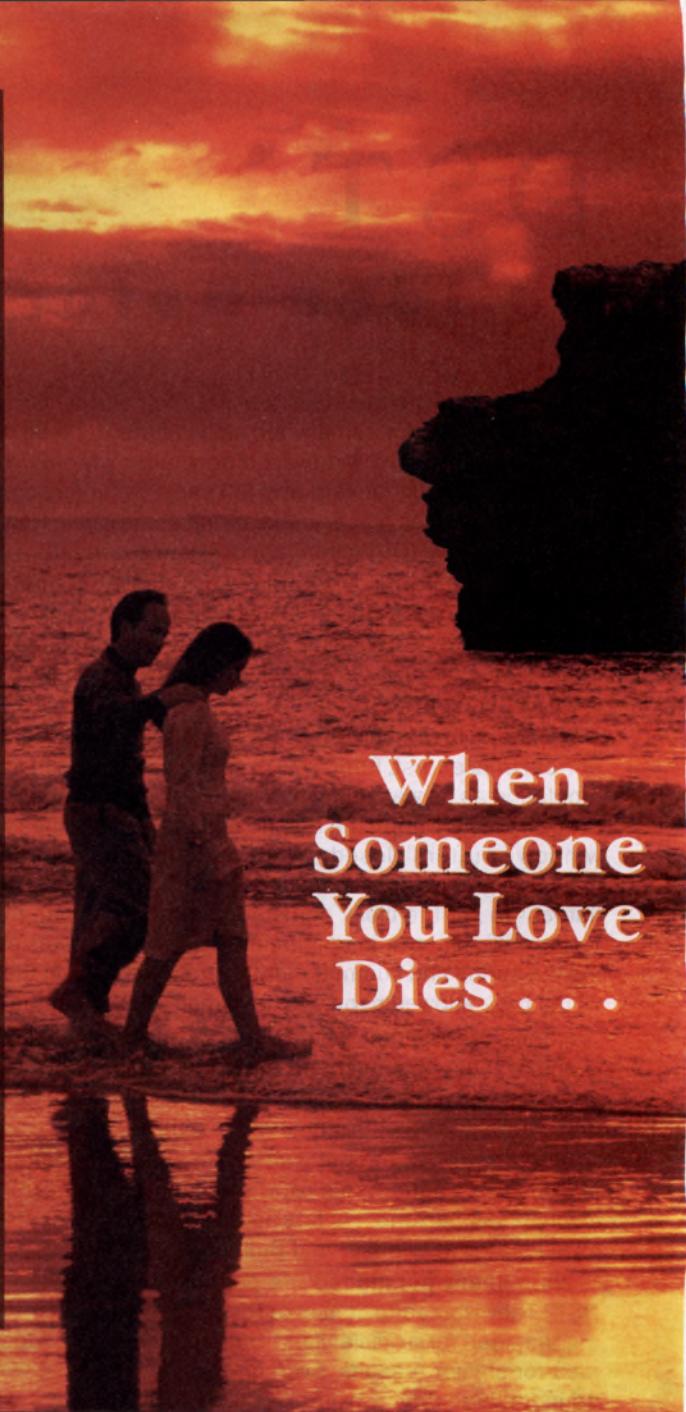
With thanks to the National Trust



"I like the way it treats matters"

That is what a young business administration assistant from Yucatán, Mexico, said regarding the way *Awake!* magazine covers topics. In a letter he explained that he was introduced to *Awake!* by a Witness coworker at the insurance brokerage firm where they both work.

With regard to *Awake!*, he stated: "It is a real source of information and truth. I like the way it treats matters, as it does not tend toward any political preference and does not value some people over others. I have found solutions to problems by reading this magazine. This is an attractive, well-balanced, up-to-date, enriching publication. I send you my most sincere congratulations!"



When Someone You Love Dies . . .

When someone you love dies, it can be a time of great sorrow. It is important to remember that you are not alone. You can turn to your family and friends for support. You can also seek help from a professional counselor or grief support group. Remember, it's okay to feel sad and to let your emotions out. Grief is a natural part of life, and it's important to allow yourself to grieve.