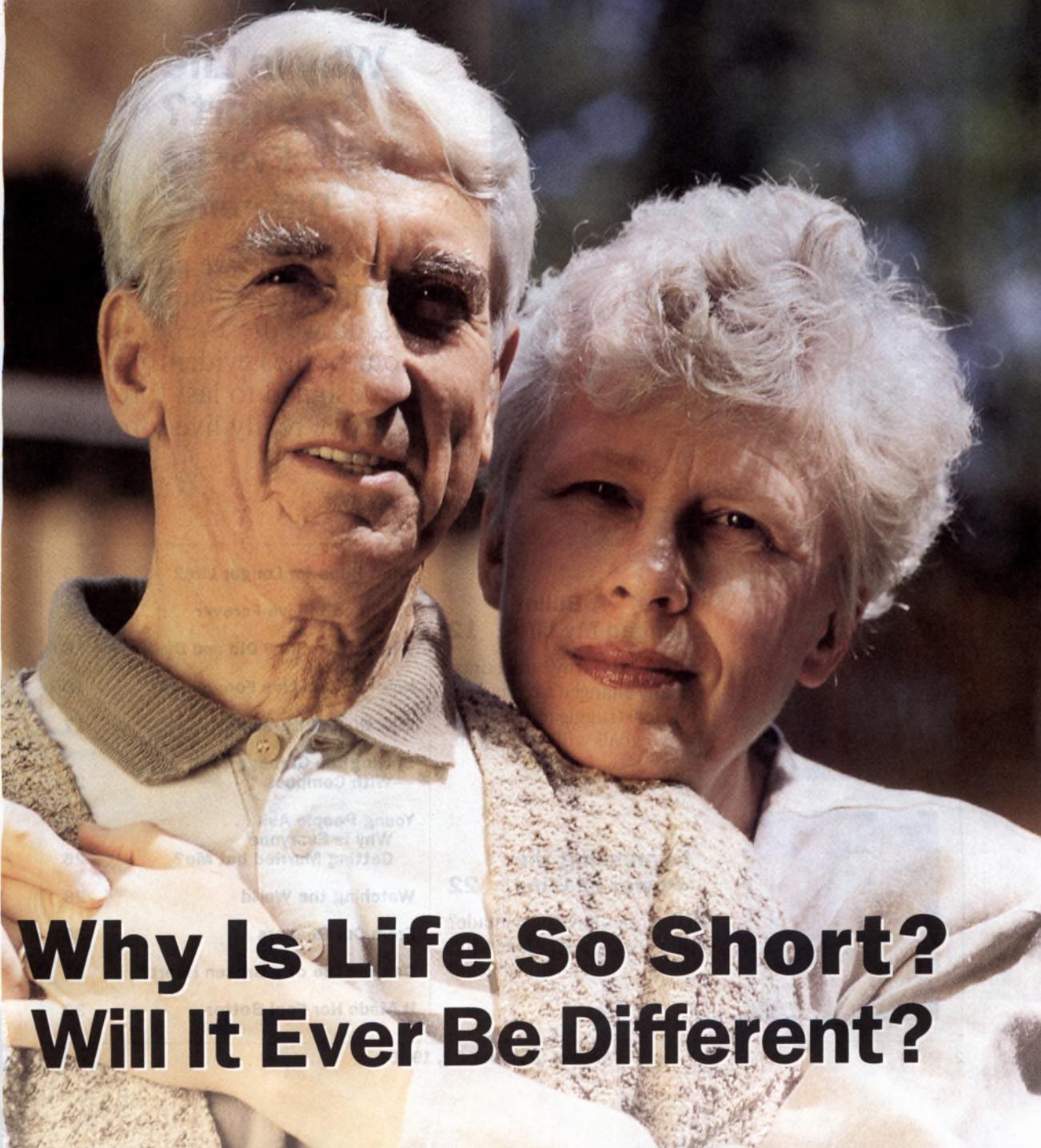
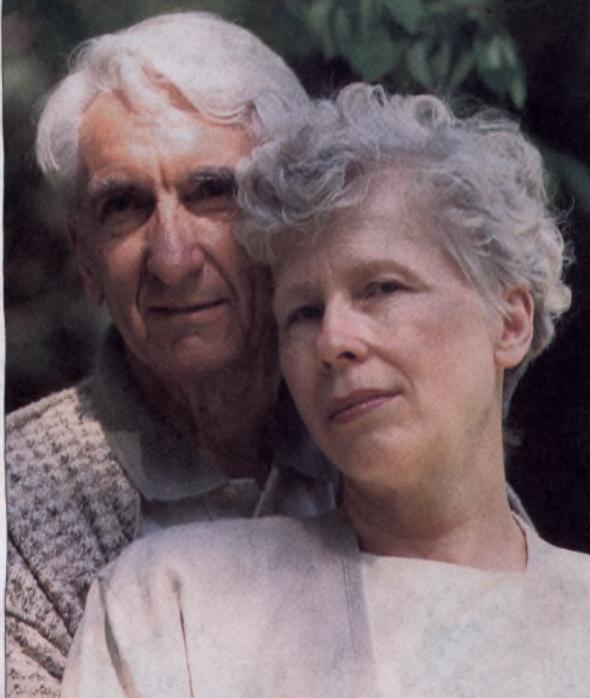


# Awake!

October 22, 1995



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# What Hope for Longer Life?

"Man, born of woman, has a short life  
yet has his fill of sorrow."

—Words of Job, recorded at Job 14:1, "The Jerusalem Bible."

**H**OW often has the shortness of life been described in poetic phrase! Like Job, a first-century writer said: "You are a mist appearing for a little while and then disappearing."—James 4:14.

Have you too noted that life is pathetically short? About 400 years ago, William Shakespeare wrote: "Out, out, brief candle! Life's but a walking shadow." And during the last century, an American Indian chief asked: "What is life?" Then he answered: "It is the flash of a firefly in the night."

How long can humans expect their life span to be? The prophet Moses described the situation in his day, some 3,500 years ago: "In themselves the days of our years are seventy years; and if because of special mightiness they are eighty years, yet their insistence is on trouble and hurtful things; for it must quickly pass by, and away we fly." —Psalm 90:10.

Seventy years—that is only 25,567 days. And 80 years consist of just 29,219 days. Really, so few! Can anything be done to extend human life?

## Can Medical Science Help?

Science magazine noted: "Life expectancy at birth [in the United States] has increased from 47 years in 1900 to about 75 years in 1988." As a result of reducing the infant death rate through better health care and nutrition, people in the United States can now expect to live about as long as Mo-

ses stated. Nonetheless, are any dramatic increases anticipated in how long most people live?

Significantly, Leonard Hayflick, a leading authority on aging, said in his book *How and Why We Age: Advances in biomedical research and the implementation of improved medical care in this century have certainly had an impact on human longevity, but only by allowing more people to approach the fixed upper limit of the human life span.*" So he explained: "*Life expectation* has increased but *life span* has not; the distinction is critical."

What is the "fixed upper limit" of man's life span? Some say it is uncertain that anyone in recent times has lived beyond the age of 115. Yet, *Science* magazine said: "As of 1990, the oldest verified age that an individual has survived is just over 120 years." And early this year the French minister of health, along with droves of reporters and photographers, visited Jeanne Calment of Arles, France, to mark her 120th birthday. Moses too lived to the age of 120, far beyond the norm.—Deuteronomy 34:7.

Do scientists hold out hope that people may commonly live that long or longer? No, most do not. A headline in the *Detroit News* read: "Researchers Say 85 May Be the Outer Limit of Average Lifespan." In the article a recognized authority on aging, S. Jay Olshansky, said: "Once you go beyond the

age of 85, people die from multiple-organ failure. They stop breathing. Basically, they die of old age. And there's no cure for that." He added: "Barring a reversal of human aging on a molecular level, the rapid increases in life expectancy are over."

*Science* magazine noted that perhaps "the upper limit to longevity has already been approached and that further significant de-

clines in mortality are unlikely." It is said that if all causes of death reported on death certificates could be eliminated, life expectancy would be increased less than 20 years.

Thus, many scientists view the length of man's life span as neither strange nor subject to change. Yet why is it reasonable to believe that humans will eventually live much longer?

## Designed to Live Forever

**T**HE human body is marvelously designed. Its development and growth are simply a miracle. An ancient writer exclaimed: "In a fear-inspiring way I am wonderfully made." (Psalm 139:14) Fully aware of the marvels of the human body, some modern scientists find aging and death a puzzle. Do you?

"Aging," wrote Harvard University biologist Steven Austad, "so constantly confronts us that I'm surprised more people don't perceive it as a central biological mystery." The fact that everyone grows old, Austad noted, "makes [aging] appear less puzzling." Still, when you really think about it, do aging and death make sense?

Last year, in his book *How and Why We Age*, Dr. Leonard Hayflick acknowledged the

marvels of human life and growth and wrote: "After performing the miracles that take us from conception to birth and then to sexual maturation and adulthood, nature chose not to devise what would seem to be a more elementary mechanism to simply maintain those miracles forever. This insight has puzzled biogerontologists [those who study the biological aspects of aging] for decades."

Are you also puzzled by aging and death? What purpose do they serve? Hayflick observed: "Virtually all biological events from conception to maturity seem to have a purpose, but aging does not. It is not obvious why aging should occur. Although we have learned much about the biology of aging . . . , we are still left with the inevitable outcome of purposeless aging followed by death."

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Is it possible that we were not meant to grow old and die but to live forever on earth?

### Desire to Live

Surely you are aware that almost everyone resents growing old and dying. In fact, many fear the prospect. In his book *How We Die*, medical doctor Sherwin B. Nuland wrote: "None of us seems psychologically able to cope with the thought of our own state of death, with the idea of a permanent unconsciousness in which there is neither void nor vacuum—in which there is simply nothing." Do you know anyone who wants to grow old, get sick, and die?

Yet, if old age and death were natural and part of some master plan, wouldn't we welcome them? But we don't. Why not? The answer is found in the way we were made. The Bible says: "[God] has even put eternity into [our] minds." (*Ecclesiastes 3:11, Byington*) Because of this desire for an endless future, people have long searched for a so-called fountain of youth. They want to stay young forever. This raises the question, Do we have the potential for longer life?

### Designed to Repair Itself

Writing in the magazine *Natural History*, biologist Austad presented the common view: "We tend to think of ourselves and other animals in the same way we think of machines: wearing out is simply inevitable." But this is not true. "Biological or-

ganisms are fundamentally different from machines," Austad said. "They are self-repairing: wounds heal, bones mend, illness passes."

Thus, the intriguing question, Why do we age? As Austad asked: "Why, then, should [biological organisms] be subject to the same sorts of wear and tear as machines?" Since bodily tissues replace themselves, couldn't they continue to do that forever?

In *Discover* magazine, evolutionary biologist Jared Diamond discussed the marvelous capacity of physical organisms to repair themselves. He wrote: "The most visible example of damage control applied to our bodies is wound healing, by which we repair damage to our skin. Many animals can achieve much more spectacular results than we can: lizards can regenerate severed tails, starfish and crabs their limbs, sea cucumbers their intestines."

Concerning replacement of teeth, Diamond stated: "Humans grow two sets, elephants six sets, and sharks an indefinite number during their lifetime." He then explained: "Regular replacement also goes on at a microscopic level. We replace the cells lining our intestine once every few days, those lining the urinary bladder once every two months, and our red blood cells once every four months.

"At the molecular level our protein molecules are subject to continuous turnover at a rate characteristic of each particular

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protein; we thereby avoid the accumulation of damaged molecules. Hence if you compare your beloved's appearance today with that of a month ago, he or she may look the same, but many of the individual molecules forming that beloved body are different. While all the king's horses and men couldn't put Humpty Dumpty together again, nature is taking us apart and putting us back together every day."

Most cells of the body are periodically replaced by newly formed ones. But some cells, such as brain neurons, may never be replaced. However, Hayflick explained: "If the cell has had *every* part replaced it is not the same old cell. The neurons you were born with might appear today to be the same cells, but in reality many of the molecules that composed them when you were born . . . may have been replaced with new molecules. So nondividing cells may not be the same cells you were born with after all!" This is because the components of the cells are replaced. Thus, replacement of body materials theoretically could keep us alive forever!

Recall that Dr. Hayflick spoke of "the miracles that take us from conception to birth." What are some of these? As we briefly examine them, consider the possibility of the implementation of what he called "a more elementary mechanism to simply maintain those miracles forever."

### The Cell

An adult is composed of some *100 trillion* cells, each of which is incomprehensibly complex. To illustrate the complexity, *Newsweek* magazine compared a cell to a walled city. "Power plants generate the cell's energy," the magazine said. "Factories produce proteins, vital units of chemical commerce. Complex transportation systems guide specific chemicals from point to point within

the cell and beyond. Sentries at the barricades control the export and import markets, and monitor the outside world for signs of danger. Disciplined biological armies stand ready to grapple with invaders. A centralized genetic government maintains order."

Consider how you—some 100 trillion cells of you—came about. You began as a single cell that was formed when the sperm from your father united with an egg cell from your mother. At that uniting, the plans were drawn up within the DNA (short for deoxyribonucleic acid) of that newly formed cell to produce what eventually became you—an entirely new and unique human. The instructions within the DNA "if written out," it is said, "would fill a thousand 600-page books."

In time, that original cell began dividing, making two cells, then four, eight, and so on. Finally, after about 270 days—during which time thousands of millions of cells of many different kinds had developed within your mother to form a baby—YOU were born. It is as if that first cell had a huge room full of books with detailed instructions on how to make you. But just as wonderful is the fact that these complicated instructions were passed along to every succeeding cell. Yes, amazingly, each of the cells in your body has all the same information as the original fertilized egg contained!

Consider this also. Since each cell has the information to produce *all kinds* of cells, when it came time, say, to make heart cells, how were the instructions to make all the other cells suppressed? Seemingly, acting like a contractor with a complete cabinet of blueprints for making a baby, a cell picked from its file cabinet a blueprint for making heart cells. Another cell picked out a different blueprint with instructions for producing nerve cells, yet another took a blueprint

for making liver cells, and so on. Surely, this still unexplained ability of a cell to select the instructions needed to produce a particular kind of cell and at the same time suppress all other instructions is another of the many "miracles that take us from conception to birth."

Yet, there is much more to it. For example, the cells of the heart need to be stimulated so that they contract rhythmically. Thus, within the heart a complex system was constructed for generating electrical impulses to cause the heart to beat at a proper rate to sustain the body in the activity in which it is engaged. Truly, a miracle

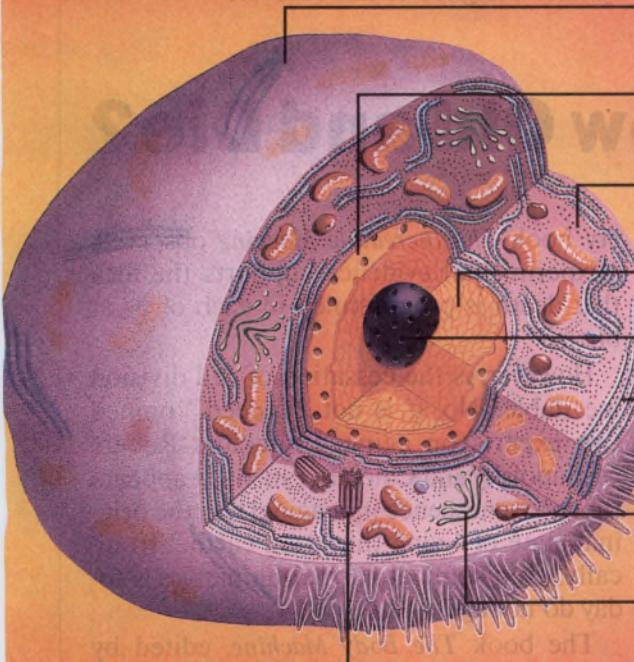
of design! No wonder doctors have said of the heart: "It is more efficient than any machine of any kind yet devised by man."

### The Brain

An even greater wonder is the development of the brain—the most mysterious part of the human miracle. Three weeks after conception, brain cells start forming. In time, about 100 billion nerve cells, called neurons—as many as there are stars in the Milky Way—are packed into a human brain.

"Each one of these receives input from about 10,000 other neurons in the brain," reported *Time* magazine, "and sends messages to a thousand more." Noting the

## The Cell—A Miracle of Design



#### Cell Membrane

The covering that controls what enters and leaves the cell

#### Nucleus

Enclosed in a double-membrane envelope, it is the control center that directs the cell's activities

#### Ribosomes

Structures on which amino acids are assembled into proteins

#### Chromosomes

They contain the cell's DNA, its genetic master plan

#### Nucleolus

The site where ribosomes are assembled

#### Endoplasmic Reticulum

Sheets of membranes that store or transport the proteins made by the ribosomes attached to them (some ribosomes float free in the cell)

#### Mitochondria

Production centers for ATP, the molecules that supply energy for the cell

#### Golgi Body

A group of flattened membrane sacs that package and distribute proteins made by the cell

#### Centrioles

They lie near the nucleus and are important in cell reproduction

possible combination possibilities, neuroscientist Gerald Edelman said: "A match head's worth of the brain contains about a billion connections that can combine in ways which can only be described as hyperastronomical—on the order of ten followed by millions of zeros."

What potential capacity does this give the brain? Astronomer Carl Sagan said that the human brain can hold information that "would fill some twenty million volumes, as many as in the world's largest libraries." Author George Leonard went further, exclaiming: "Perhaps, in fact, we can now propose an incredible hypothesis: *The ultimate creative capacity of the brain may be, for all practical purposes, infinite.*"

Thus, we should not be surprised by the following statements: "The brain," said molecular biologist James Watson, codiscoverer of the physical structure of DNA, "is

the most complex thing we have yet discovered in our universe." Neurologist Richard Restak, who resents the comparison of the brain to a computer, said: "The brain's uniqueness stems from the fact that nowhere in the known universe is there anything even remotely resembling it."

Neuroscientists say that during our present life span, we use just a small part of our potential brain power, only about 1/10,000, or 1/100 of 1 percent, according to one estimate. Think about it. Is it reasonable that we would be given a brain with such miraculous possibilities if it was never to be used fully? Is it not reasonable that humans, with the capacity for endless learning, were actually designed to live forever?

If that is true, why do we grow old? What went wrong? Why, after some 70 or 80 years, do we die, even though our bodies evidently were designed to last forever?

## Why Do We Grow Old and Die?

**W**ITH the exception of the discovery that age changes occur within individual cells," Dr. Leonard Hayflick admits, "we do not know much more today about the fundamental cause of aging than we did a century ago." In fact, he says: "We know of no good reason why aging should happen."

Laboratory experiments conducted about 30 years ago revealed that when normal human cells taken from a fetus were cultured under the best of conditions, death followed after some 50 doublings. On the other hand, cells taken from a very old person divided only between two and ten times before they died. Thus, the National Geographic Soci-

ety book *The Incredible Machine* observed: "Experimental evidence supports the idea that death is programmed in each of us at birth."

However, is the cessation of cell division inevitable? No, it is not. "Indeed," opined two experts on aging, Professors Robert M. Sapolsky and Caleb E. Finch, "it appears that non senescence [not aging] was the original state of living things on earth." Ironically, even some abnormal human cells today do not age.

The book *The Body Machine*, edited by Dr. Christiaan Barnard, who performed the first human-to-human heart transplant, explained: "The discovery of 'immortal cells'

presented a major headache to biologists interested in senescence, until it became clear that such cells were abnormal." Yes, some lines of cancer cells can be sustained in continuous culture through seemingly endless doublings! *The World Book Encyclopedia* noted: "If scientists can determine how such abnormal cells survive, they may gain an insight into the process of cell aging." Thus, today some cancer cells can apparently proliferate indefinitely in the laboratory, but normal cell cultures grow old and die.

### A Defective Mechanism

Are human aging and death the result of, as *The Body Machine* puts it, "the loss of proliferation capacity in [normal] cell population"? If so, the book said, "it is important to locate and understand the mechanism that controls this finite repetitive capacity in order to manipulate it in an attempt to increase the human lifespan."

As you may recall from the previous article, Dr. Hayflick spoke of "the miracles that take us from conception to birth and then to sexual maturation and adulthood." He then referred to "a more elementary mechanism to simply maintain those miracles forever."

Despite years of concerted efforts, scientists have failed to discover a mechanism that would maintain life forever. "The causes of aging remain a mystery," admits the book *The Incredible Machine*.

However, the cause of aging and death is actually no secret. The answer is available.

### What Is the Answer?

The one who has the answer is the one responsible for "the miracles that take us from conception to birth," our all-wise Creator, Jehovah God. "With you is the source of life," the Bible says of him. "Know that Jehovah is God. It is he that has made us, and not we ourselves."—Psalm 36:9; 100:3.

Think of how wonderfully Jehovah God

programmed your development in the womb, writing, as it were, a book of instructions for making you a unique individual! "You yourself produced my kidneys; you kept me screened off in the belly of my mother," wrote a Bible psalmist. "My bones were not hidden from you when I was made in secret... Your eyes saw even the embryo of me, and *in your book all its parts were down in writing.*" (Psalm 139:13, 15, 16) Obviously, our marvelously designed human organism is not the product of mere chance!

Yet, if Jehovah God created us perfect so that we could live forever, why do we grow old and die? The answer is found in a prohibition placed upon the first man, Adam, whom God put in a beautiful home on earth. God commanded him: "From every tree of the garden you may eat to satisfaction. But as for the tree of the knowledge of good and bad you must not eat from it, for in the day you eat from it *you will positively die.*"—Genesis 2:16, 17.

What happened? Instead of obeying his heavenly Father, Adam disobeyed, joining his wife, Eve, in eating of the tree. They selfishly grasped at a false promise of an angelic rebel. (Genesis 3:1-6; Revelation 12:9) So, as God had warned, they died. Although Adam and Eve were designed with the potential to live forever, this was contingent upon obedience to God. By being disobedient, they sinned. Then, as sinners, they passed on to all their offspring the death-dealing defect in their bodies. "Thus death spread to all men."—Romans 5:12; Job 14:4.

This, however, does not mean that there is no hope for conquering aging and death. It should not be hard to believe that our all-wise Creator can heal any genetic irregularities and supply energy for the continuation of our lives forever. But how will he do this? And what must we do to enjoy his promises of everlasting life?

# How You Can Live Forever

**S**INCE the human body clearly has the potential for a much longer life than humans enjoy today, some put their trust in science to discover how we can live forever. "As we gain a more complete knowledge of the chemicals of the body and how they interact," Dr. Alvin Silverstein wrote, "we will unravel the essence of life. We will understand . . . how a person ages."

With what consequence? It will lead to "a new era in human history," Silverstein said. "There will be no more 'old' people, for the knowledge that will permit the conquest of death will also bring eternal youth."

Will humans accomplish this? "Do not put your trust in nobles, nor in the son of earthling man, to whom no salvation belongs," the Bible urges. "His spirit goes out, he goes back to his ground; in that day his

thoughts do perish." (Psalm 146:3, 4) Humans have been unable to isolate, much less correct, the inherent flaw that results in aging and death, even as we have seen. Only our Creator can do that.

Yet, is it really the purpose of God that humans live forever on earth?

## God's Purpose

Where did Jehovah God put the first human couple to live? It was in an earthly paradise. And they were instructed to "be fruitful and become many and fill the earth and subdue it." (Genesis 1:28) Yes, God's purpose was to have, in the course of time, the entire earth inhabited by a righteous human family living together in peace and happiness.—Isaiah 45:18.

Although a death sentence was imposed on Adam because of his disobedience,

***Under Christ's princely rule, aging and death will be conquered***



God's original purpose for humans to live forever in Paradise on earth did not change. (Genesis 3:17-19) "I have even spoken it," God says, "I shall also do it." (Isaiah 46:11; 55:11) God showed that his purpose had not changed regarding the earth when he said: "The righteous themselves will possess the earth, and they will reside forever upon it."—Psalm 37:29.

As our Creator, God is in a position to correct the defect that causes humans to grow old and die. On what basis does he do this? Since that defect was inherited from the first man, Adam, God has provided as a ransom sacrifice the perfect human life of his Son, Jesus Christ, "in order that everyone exercising faith in him might not be destroyed but have everlasting life."—John 3:16; Matthew 20:28.

Jesus Christ thus replaces, in effect, the original Adam as our father, or life-giver. That is why in the Bible Jesus is called "the last Adam." (1 Corinthians 15:45) So instead of being condemned to die as children of the sinner Adam, obedient humans may be reckoned worthy to receive everlasting life as children of their "Eternal Father," Jesus Christ.—Isaiah 9:6.

Of course, "the King of eternity" and "the Father of our Lord Jesus Christ" is Jehovah God. (1 Timothy 1:17; Revelation 15:3; Colossians 1:3) Yet Jesus Christ, as well as being provided as our "Eternal Father" and "Savior," is also the "Prince of Peace." (Luke 2:11) As representative of his Father, Christ will exercise princely authority to bring peace to the earth.—Psalm 72:1-8; 110:1, 2; Hebrews 1:3, 4.

Under the rule of Jesus Christ, the earthly Paradise that was lost will be regained. This will occur, Jesus said, "in the re-creation, when the Son of man sits down upon his glorious throne." (Matthew 19:28) Faithful

followers of Christ—altogether 144,000 of them—will rule with him over the Paradise earth. (2 Timothy 2:11, 12; Revelation 5:10; 14:1, 3) Millions will benefit from that righteous rule by enjoying life on earth in Paradise. Included among them will be the criminal who died alongside Jesus and to whom Jesus promised: "You will be with me in Paradise."—Luke 23:43.

Thus, even the unrighteous dead will be resurrected and will be provided opportunity to qualify for everlasting life on earth. (Acts 24:15) The Bible beautifully describes the elimination of sickness, aging, and death, saying: "God himself will be with them. And he will wipe out every tear from their eyes, and death will be no more, neither will mourning nor outcry nor pain be anymore. The former things have passed away."—Revelation 21:3, 4.

### **How to Live Forever**

Surely you want to be among those who will possess the earth and reside forever upon it. If so, you must meet the requirements for living forever in Paradise. In prayer to his heavenly Father, Jesus Christ declared a basic requirement, saying: "This means everlasting life, their taking in knowledge of you, the only true God, and of the one whom you sent forth, Jesus Christ."—John 17:3.

Jehovah's Witnesses will be happy to help you to take in this life-giving knowledge. Simply ask them and they will, free of charge, visit at a convenient time and discuss how God purposes to raise humankind to spiritual and bodily perfection. Be assured that our almighty Creator is fully capable of correcting the inherent flaw that causes aging and death. The time is coming, and it is near, when life no longer will be so short. Jehovah will bless his people with "life to time indefinite."—Psalm 133:3.

# A Bullet Changed My Life

THE finest thing that parents can do for their children is instill in them a knowledge of their Creator and a desire to serve him. A tragedy that befell me when I was only a teenager has helped me to appreciate this truth.

Before describing what happened then—over 20 years ago—let me tell a little about my life as I grew up in the southern United States. It bears directly on how I have been able to cope with overwhelming adversities.

## What Shaped My Life

I was born in Birmingham, Alabama—part of the racially segregated Deep South—in January 1955. When I was only eight, a bomb blast not far from our home shattered a church during Sunday-school classes. Terrified black children, many about my own age, ran out screaming; others were bleeding and moaning. Four were dead—murdered by whites.

Such tragedies were not isolated incidents in the South. The following summer three civil rights workers were murdered in Mississippi. Those were terrifying days of racial disorder that affected all of us.

My mother was one of Jehovah's Witnesses, and Father became one in 1966. Soon our whole family was sharing with our neighbors our Bible-based hope of a new world of peace. (Psalm 37:29; Proverbs 2:21, 22; Revelation 21:3, 4) Every Saturday during the summers of the late 1960's, we traveled to untouched territory outside Birmingham to



preach. There, people had never heard of Jehovah's Witnesses or of the Kingdom message we preached. They didn't even know God's name, Jehovah. (Psalm 83:18) During those troubled times, I really enjoyed talking to people about Jehovah's purpose to replace this corrupt old world with an earthly paradise.—Luke 23:43.

## Setting a Goal in Life

In December 1969, I symbolized my dedication to Jehovah by water baptism. I prayed to Jehovah and expressed my sincere desire to pursue the full-time ministry as a career. A few weeks later, Father was assigned to help the small congregation located at Adamsville, a few miles from Birmingham. This change of territory intensified my desire to be a pioneer, or full-time minister. At every opportunity through my high school years, I would temporary pioneer, which involved spending at least 75 hours in the ministry each month.

I decided to learn a skill to prepare me for the full-time ministry after I graduated. But in my last year of high school, I faced a challenge. I was among a group of special achievers, and so one day I was taken to a nearby college for some academic tests. Afterward I was called into the counselor's office. She was excited and happy for me. "You have excelled!" she exclaimed. "You can get into any college you choose!" She wanted me to start filling out scholarship applications right away.

I was upset because I wasn't prepared for this. I immediately explained my plans to

become a full-time minister and to pursue part-time secular work to support myself in the ministry. I even told her that later, as other Witnesses have done, I might be able to serve as a missionary in a foreign country. But it was as if she didn't hear me. She suggested that I major in science and that if I attended a local college, she would see that I got a job in a science center.

"Confine your religion to weekends, Gloria," she said, "your parents will still be proud of you." I felt insulted that she might presume my goal of the full-time ministry was a result of being egged on by my parents. She made me feel pressured, as if I was turning my back on the entire black race by refusing this grand opportunity. However, I stood my ground. After graduation, rather than pursue a college education, I began working part-time as a secretary.

I searched for a pioneer partner but to no avail. When a traveling overseer visited our congregation, I told him about my problem. "You don't need a partner," he said. Then he jotted down a schedule whereby I could fulfill my secular work responsibilities and also have sufficient time to pioneer. I felt the schedule was perfect. I was so elated that I set February 1, 1975, as my date to start pioneering.

However, a few days later, on December 20, 1974, while walking home from a convenience store, I was hit by a stray bullet.

#### At Death's Door

As I lay on the ground, I could literally see my lifeblood pouring out. I remember thinking that I was going to die. I asked Jehovah to let me live long enough to help Mother understand that such a devastating accident could happen even to a family totally focused on serving Jehovah. Though we were familiar with the Bible text "time and unforeseen occurrence befall them all,"

I didn't think we were prepared to handle such a terrible tragedy.—Ecclesiastes 9:11.

The bullet hit me in the left side of the neck, severing nerves in my spinal cord. My speaking and breathing were affected. I was not expected to live for more than two days. Then they said "two weeks." But I kept living. As pneumonia set in, I was transferred to a more complicated respirator. In time, my condition stabilized, and plans were made for rehabilitation.

#### Trials of Rehabilitation

I didn't feel despondent for the first few weeks. I just felt numb. Everyone at the Spain Rehabilitation Center in Birmingham was kind and worked hard in my behalf. I began to learn from the staff that the doctors expected me to be totally paralyzed, flat on my back, for the rest of my life. I was classified a level C2 quadriplegic, which meant they felt I would be on a respirator for the rest of my life, unable to speak above a whisper.

The doctors had inserted a tracheal tube through which I breathed. Later the pulmonary specialist put in a smaller tube to see if it would allow me to speak. However, the size didn't make any difference. So they concluded that my inability to talk was due to nerve damage. About that time I began to get depressed, and there was nothing anyone could say to make me feel better. Every kind word hit me like an insult. So I would cry a lot.

I realized that if something impedes your spirituality, two things can help—persistent prayer to Jehovah and throwing yourself into the ministry, telling others about Bible truths. (Proverbs 3:5) Well, praying was easy. I could do that. But how could I, in my condition, become more active in the ministry?

I asked my family to bring copies of the *Watchtower* and *Awake!* magazines and other

Bible study aids that we were then using in the ministry, such as *The Truth That Leads to Eternal Life, True Peace and Security—From What Source?*, and *Is This Life All There Is?* These were placed in different parts of my room. Staff members often looked at me compassionately and asked: "Darling, is there anything I can do for you?"

I would eye a piece of literature, and by mouthing my words, I would ask the person to read to me. I would count the time the person spent reading as my hours in the ministry. To show my gratitude to the person for reading to me, I would often make a gift of the book or magazine. I counted these as my placements. When someone read to me a second time, I counted a return visit. Sharing in this way in the ministry kept me encouraged, as did the heartwarming cards, flowers, and visits of my many Christian brothers and sisters.

After months of rehabilitation, I was able to raise my head only a little. But I was determined to achieve greater mobility. So I asked for more time in physical and occupational therapy. When I requested to be put in a wheelchair, I was told that it was impossible, that I could not hold my head high enough to sit up. I asked them to try anyway.

After an OK was given by the doctors, the therapist in charge helped get me up into a wheelchair. They wrapped me in ace bandages from chest to waist, from thigh to knee, and from knee to foot. I looked like a mummy. This was a precaution to make sure that my blood pressure remained stable and to prevent shock. It worked! Still, I was only allowed to sit up for an hour at a time. But I was sitting—after having been flat on my back for 57 days!

### Home at Last!

Finally, after five long months, my tracheal tube was removed, and I was permit-

ted to go home. That was May 1975. Afterward, I would travel back and forth to the rehabilitation center for treatment. As early as the summer of 1975, I began going in the Christian ministry in my wheelchair. I couldn't do much, but at least I was out there with the friends.

Sometime early in 1976, I was asked to go for reevaluation by the VRS (Vocational Rehabilitation Services), the agency responsible for funding my rehabilitation. I thought I was making progress. I was learning to paint with a brush that I held with my teeth. Using a stick in the same way, I was beginning to type and even write some with a pencil. Since the VRS was paying for most of my treatment, they wanted to find a way for me to get a job and become a productive member of society.

The adviser seemed considerate at first, but he started asking me to try to speak louder. At the time I could only speak slightly above a whisper. Then he asked: "Can't you sit up straight?"

I couldn't.

"Move just one finger," he said.

When I couldn't even do that, he slammed his pen down on his desk and said in a frustrated voice: "You are useless!"

I was told to go home and await his call. I understood his dilemma. No patient before me at the Spain Rehabilitation Center had had limitations that were as severe as mine. The cost of the equipment used there is very high, and the person responsible for making decisions didn't have guidelines regarding what to do with a patient as limited as I. Yet, it hurt to be called useless, since I had already begun to feel that way.

A few days later, I received a call and was told that I no longer was part of the program. I felt abandoned. And that resulted in another bout of depression.

### **Overcoming Depression**

I then thought of the scripture at Psalm 55:22, which says: "Throw your burden upon Jehovah himself, and he himself will sustain you." One thing I was concerned about was the financial burden on my parents, and I prayed about this.

My depressed condition affected me adversely physically, so during the district convention that summer I wasn't able to sit up. I listened to the program lying down. What is called the auxiliary pioneer work was introduced at that 1976 convention, and it caught my attention. To auxiliary pioneer requires spending only 60 hours a month in the ministry, an average of just 2 hours a day. I felt I could do that. Later, I asked my sister Elizabeth to help me auxiliary pioneer. She thought I was joking, but when I turned in my application to pioneer in August, she turned one in also.

Elizabeth would get up early and tend to my personal needs. Then we would begin telephone witnessing. This involved calling people on the telephone and conversing with them about the blessings God has in store for people under the rule of his Kingdom. We also wrote letters, especially to persons who needed comfort. On weekends family or friends took me in the door-to-

door ministry in my wheelchair. Of course, since I have no use of my limbs, I can do nothing but speak the Kingdom message, quote scriptures, or ask others to read from the Bible.

By the last day of the month, I still needed 6 hours to make my required 60. Elizabeth was not available to help me, so I asked my mother to set the back of my wheelchair so I could sit erect. Then, using a mouth stick, I typed letters for six hours. No bad consequences were suffered! All I know is that I was really tired!

### **My Prayer Answered**

The following week, sitting erect in my wheelchair, I went to the Spain Rehabilitation Center for a checkup. My doctor, who had not seen me since I had been dropped from the program early in the year, was amazed. He couldn't believe my improvement. "What have you been doing?" he asked. Even before I could finish telling about my ministry, he offered me a job.

His assistant interviewed me and was impressed with what I was doing in the ministry. She asked me to participate in what is called the model patient program. This would match me with another patient that I would help. Referring to our ministry, she

***My Christian ministry—going from house to house, witnessing by telephone, writing letters***





***My paintings have been entered in mouth-painting exhibitions***

said: "This is what your people do anyway, isn't it?" I was assigned to assist a patient almost as limited as myself.

Somehow news about what I was accomplishing in the ministry with my family's help reached the VRS. They were so impressed that it was recommended that I be readmitted to the program. This meant our family would receive funding to pay for the special equipment and care I need to carry on my activity. I felt that God had answered my prayers.

**My Condition Stabilized**

The extent of my physical recovery has been such that I can raise my head, turn it, and sit up. Thankfully, I recovered practically full speaking ability. Using a mouth stick, I can write, type, operate a speakerphone, and paint. Some of my paintings have been entered in mouth-painting exhibitions. I get around in a motorized wheelchair that I drive by chin control. A power lift raises my wheelchair into our van, and with this I can be taken practically anywhere I want to go.

I have had a lot of respiratory problems—pneumonia is a constant threat. Sometimes I require oxygen at night. In 1984, I nearly died as a result of complications from an infection. I was in and out of the



hospital several times. But since then my health has improved. Beginning in 1976, I managed to auxiliary pioneer once or twice a year. But I didn't feel fulfilled. I kept thinking about the plans I had as a teenager that had been cut short by the bullet.

**My Goal Realized**

On September 1, 1990, I finally joined the ranks of full-time pioneers, thus fulfilling my childhood desire. During the winter months when it is cold, I do witnessing by writing letters and using the speakerphone. But when the weather turns warmer, I also share in the house-to-house ministry. Year-round, I conduct Bible studies from home by using the speakerphone.

I'm eagerly looking forward to a wonderful future in the Paradise earth when Christ Jesus and Jehovah God deliver me from this wheelchair. Every day I thank Jehovah for his promises of vibrant health and the ability to "climb up just as a stag does." (Isaiah 35:6) I'm going to run for as long as it takes me to make up for lost time, and then I'm going to learn how to ride a horse.

Awaiting that time, I have indescribable joy even now in being one of Jehovah's happy people and in having a full share in the ministry.—*As told by Gloria Williams.*

# Why Build With Wood?

BY AWAKE! CORRESPONDENT IN JAPAN

**G**LISTERING like silvery fish scales in the cool sun of northwest Russia are 22 onion-shaped cupolas sitting atop a wooden church. A closer look reveals that the cupolas are covered with thousands of wooden tiles, now weathered by age. For almost three hundred years, this wooden building on an island in Lake Onega has been defying the country's harsh winters. Silently it testifies to the amazing durability of wood.

Other buildings give even stronger testimony. Scattered throughout northern Europe are wooden structures that have been in use far longer. For instance, the handiwork of Norwegians who went on a wood-building spree about the 12th century can still be seen dotting the countryside. Over in England, still braving the notorious weather, is a wooden building near Ongar, Essex, constructed about 1013. But what seems to be the grandfather of all of them is a wooden temple in Japan that is centuries older.

*Onion-shaped cupolas atop wooden church on island in Lake Onega*



## The Oldest Wooden Building

How is it possible for this wooden Horyuji Temple to stand so long? Basically it is because of the original carpenters' superb knowledge of wood. They knew which wood to choose and which parts to use for specific functions. Their choice in this case was *hinoki* (Japanese cypress), which had been growing for at least a thousand years before it was cut.

Master carpenter Tsunekazu Nishioka, who died recently, spent much of his life working on the temple's renovations. He claimed that the nails—which were made in the same way as samurai swords, using repeated hammering-and-heating techniques—have also played an important part in the temple's longevity. In the renovation work, the old nails were used because, as he said, “modern nails don't last 20 years.”

Some may question whether the Horyuji Temple is really 1,300 years old, since 35 percent of it has been replaced this century. However, many major pillars, main

Tass/Sovfoto

beams, and eaves are of the original wood. Nishioka said: "I think the temple will last another 1,000 years."

With wood of this quality growing all around them, it is little wonder that the ancient Japanese developed a love for timber. Even today their homes reflect that this love has been passed down.

### Japanese Homes

Indoors, wood is used extensively, but it is not painted. Pillars, doors, furniture, and so forth, are given a finish that allows for the natural grain and color to be admired. Wooden planks on the veranda are given no finish at all. The unfinished wood provides a natural link to the trees and shrubs in the garden. The effect is one of harmony and tranquillity rather than stimulation.

Many Japanese say that this is the kind of house they dream of owning. However, good quality timber to build such a home is now far too expensive for the ordinary worker. Even so, the Japanese like to use wood where they can because history has taught them that besides looking good, wood suits their environment, which includes frequent earthquakes, typhoons, hot humid summers, and cold winters.

Wood is a boon to earthquake-prone countries, since it obligingly bends and twists under strain when materials such as stone would crack. Wood also has the splendid properties of moisture maintenance and insulation. Despite the rain and dampness in Japan from June through August, houses do not rot. Wood adapts and provides a measure of comfort at this time because it



*The wooden Horyuji Temple in Japan*



can absorb moisture from the air and afterward dry out. Nonetheless, wood is appealing to the ordinary person for far different reasons.

### The Beauty of Wood

Throughout the world most people choose wood because of its looks. Albert Jackson and David Day in their *Collins Good Wood Handbook* explain: "Since wood is a product of nature, each piece is unique. Each section of wood taken from a tree, or even from the same board, will be different. It may have the same strength or colour, but not the same grain pattern. It is this diversity of character, strength, colour, workability and even scent that makes wood so appealing."

Why can so much variety be seen in wood grains? Well, for a start, while some trees grow straight grains, others form knotty grains, and still others produce wavy or even curly grains. Then, as trees grow they often twist or change their direction of growth, they send out branches, and insects come and go. All of this makes for interesting patterns. In addition, the pattern looks different according to the direction in which the wood is cut. One reddish-brown wood that is cut to have a pronounced pattern of almost-black streaks has been named zebrawood in some countries and tigerwood in others.

Further enhancing the beauty of wood is the tremendous variety in color. Not all wood is brown. Black heartwood of ebony comes from India and Sri Lanka, red to purple-brown camwood from West Africa, and deep red mahogany from Central and South America. The bright orange-red brazilwood, which on exposure turns to a rich red-brown, originates in Brazil. Some woods are green, and some are pink. Alaska provides the pale yellow wood of yellow cedar, and the European sycamore is even paler. At the end of the spectrum are the whitewoods, so pale as to be almost colorless.

Also attractive to many is the scent of wood. One fragrant wood is juniper, which Solomon's carpenters used to overlay the floor of the temple. (1 Kings 6:15) Perhaps the scent of the juniper wood permeated the air and mingled at times with that of the incense. (2 Chronicles 2:4) Juniper is famed not just for being fragrant but also for being long-lasting and resisting decay.

Much, much more could be said in the praise of wood. Its virtues are so many that we may wonder what could possibly be said against it.

### The Gift of Wood

True, not all wood resists pests, nor does all resist decay or last hundreds of years. The major concern in building with wood is fire. Yet, in extreme heat heavy wood chars slowly, loses its strength slowly, and takes longer to fall down than steel. Few houses today, however, have the old-type heavy wood beams and pillars. So a person would have to escape a burning house as fast as possible.

Wood is not a cheap shoddy building material. Rather, wood that is chosen and treated correctly can become a well-insulated building that will provide hundreds of years of use. Some authorities claim that it would never decay if we took care of it properly. Be that as it may, wood is certainly one of the finest building materials the Creator has given us.

### IN OUR NEXT ISSUE

#### In Search of the Greatest Artist

#### The Tawny Owl by Hadrian's Wall

#### The Mormon Church —A Restoration of All Things?

# *Solving the Garbage Glut*

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## **WITH COMPOST**

BY AWAKE! CORRESPONDENT IN FINLAND

**A**S MANKIND'S garbage piles up, it poses one of the toughest dilemmas of our age. Modern technology, adept though it is at producing garbage, seems quite at a loss when it comes to getting rid of it. The obvious, time-honored solutions are fraught with problems. Since dumping the garbage may pollute neighboring groundwater, many countries have forced garbage dumps to close. And burning the garbage can release toxic chemicals and leave behind ash, both of which present their own disposal problems. High-technology incinerators are thus unpopular in many areas.

What alternative is left? Some suggest a natural way of getting rid of solid waste—a sort of biological "fire" called composting. Like fire, composting reduces organic matter into a number of by-products, releasing heat in the process. The by-products of composting can be quite useful. The gases and heat may be used as sources of energy. And the solid by-product, humus, is a valuable soil fertilizer in agriculture.

Composting is growing in popularity. In Finland, for example, the town of Korsholm and its neighboring city Vaasa have developed an advanced garbage processing plant that uses composting. The plant's designers found an ingenious way to solve two of the region's problems at once. Gravel for construction and roads is a scarce resource. Hence, the idea to blast a wide, 130-foot-deep hole in the bedrock. After producing great amounts of gravel, the hole formed an ideal site for a huge bioreactor to

treat municipal waste. Being surrounded by solid rock helps the reactor to maintain the constant temperature so essential to the fermentation process.

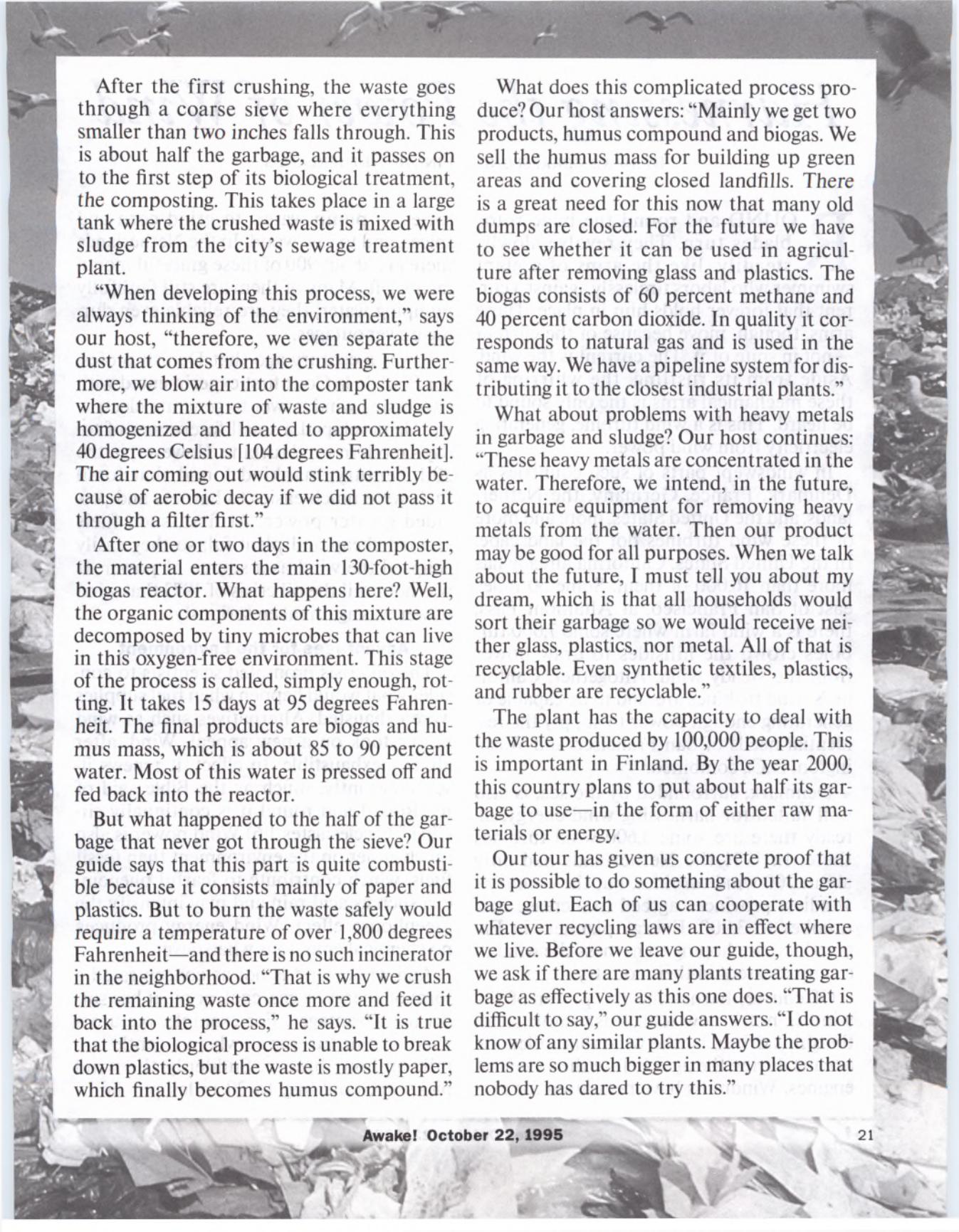
The result? To a large extent, this modern plant has solved the region's garbage problem. It reduces garbage in volume by 75 percent and in weight by 66 percent. How is this possible? Let us visit the plant.

### **A Unique Garbage Treatment Plant**

Our first impression on arriving is that this place has little in common with conventional garbage dumps. There are no rats, and there is no foul odor. Here waste management seems only another productive industry.

The plant manager first shows us a chart explaining what happens in the plant. A two-step process reduces most of the bulk and volume of the garbage—first composting it and then rotting it. In composting, the waste is broken down in the presence of air; in rotting, it ferments without exposure to air. But before either of these processes begins, the waste is crushed.

From a window of the control booth, we see a garbage truck backing through a big door. It dumps the garbage into a huge funnel-shaped pit, where a belt feeds it into a shredder. Larger objects, such as bicycle frames, car tires, exhaust pipes, and most pieces of plastic, are removed by a crane. Our host explains that when old refrigerators and freezers come in, they are sent for repairs and are later sold to less-developed countries.



After the first crushing, the waste goes through a coarse sieve where everything smaller than two inches falls through. This is about half the garbage, and it passes on to the first step of its biological treatment, the composting. This takes place in a large tank where the crushed waste is mixed with sludge from the city's sewage treatment plant.

"When developing this process, we were always thinking of the environment," says our host, "therefore, we even separate the dust that comes from the crushing. Furthermore, we blow air into the composter tank where the mixture of waste and sludge is homogenized and heated to approximately 40 degrees Celsius [104 degrees Fahrenheit]. The air coming out would stink terribly because of aerobic decay if we did not pass it through a filter first."

After one or two days in the composter, the material enters the main 130-foot-high biogas reactor. What happens here? Well, the organic components of this mixture are decomposed by tiny microbes that can live in this oxygen-free environment. This stage of the process is called, simply enough, rotting. It takes 15 days at 95 degrees Fahrenheit. The final products are biogas and humus mass, which is about 85 to 90 percent water. Most of this water is pressed off and fed back into the reactor.

But what happened to the half of the garbage that never got through the sieve? Our guide says that this part is quite combustible because it consists mainly of paper and plastics. But to burn the waste safely would require a temperature of over 1,800 degrees Fahrenheit—and there is no such incinerator in the neighborhood. "That is why we crush the remaining waste once more and feed it back into the process," he says. "It is true that the biological process is unable to break down plastics, but the waste is mostly paper, which finally becomes humus compound."

What does this complicated process produce? Our host answers: "Mainly we get two products, humus compound and biogas. We sell the humus mass for building up green areas and covering closed landfills. There is a great need for this now that many old dumps are closed. For the future we have to see whether it can be used in agriculture after removing glass and plastics. The biogas consists of 60 percent methane and 40 percent carbon dioxide. In quality it corresponds to natural gas and is used in the same way. We have a pipeline system for distributing it to the closest industrial plants."

What about problems with heavy metals in garbage and sludge? Our host continues: "These heavy metals are concentrated in the water. Therefore, we intend, in the future, to acquire equipment for removing heavy metals from the water. Then our product may be good for all purposes. When we talk about the future, I must tell you about my dream, which is that all households would sort their garbage so we would receive neither glass, plastics, nor metal. All of that is recyclable. Even synthetic textiles, plastics, and rubber are recyclable."

The plant has the capacity to deal with the waste produced by 100,000 people. This is important in Finland. By the year 2000, this country plans to put about half its garbage to use—in the form of either raw materials or energy.

Our tour has given us concrete proof that it is possible to do something about the garbage glut. Each of us can cooperate with whatever recycling laws are in effect where we live. Before we leave our guide, though, we ask if there are many plants treating garbage as effectively as this one does. "That is difficult to say," our guide answers. "I do not know of any similar plants. Maybe the problems are so much bigger in many places that nobody has dared to try this."

# *Harnessing the Power of Wind*

BY AWAKE! CORRESPONDENT IN THE NETHERLANDS

**R**OUND and round the huge rotor blades turn. They revolve slowly, steadily, like the arms of a giant swimmer who labors tirelessly against a current that forever holds him in place. These arms, though, move because of the current—not in spite of it. The current is the wind. Aside from its rustling, the whirring of these mechanical arms is the only sound to be heard. This is a wind turbine, generating electricity from wind power.

In windswept parts of such countries as Denmark, France, Germany, the Netherlands, and the United States, more and more of these wind turbines dot the landscape. In the United States, California already has more than 16,000 of them. Some 30 miles east of San Francisco, at Altamont Pass, there is a wind farm where some 7,000 turbines crowd the hillsides to draw power from the steady wind. Altogether, California's wind turbines are said to be capable of generating enough power to supply the residential needs of San Francisco and Washington, D.C., combined.

Denmark, surrounded by the sea, is also well suited for harnessing wind energy; already there are some 3,600 wind turbines there. In 1991 the Netherlands had only about 300 wind turbines, but the country's windiest provinces agreed to increase that number to 3,000. Energy planners in England too are hoping to harness the wind to a similar extent in their country.

Of course, harnessing the power of the wind is not a new idea. Just think of all the ships driven by the wind that sailed the oceans during the ages before the advent of engines. Windmills have been used for cen-

turies to pump water, to grind corn and spices, and to saw wood. In the Netherlands there are about 900 of these graceful monuments left. Many of them are still faithfully pumping water; they are reliable even during power outages.

It was a century ago that Danish professor Poul de la Cour first experimented with harnessing wind power to generate electricity. He developed a small forerunner of today's modern wind turbine. However, in the 20th century, mankind found that fossil fuels were much easier to harness and provided greater power. At first, such fuels seemed cheap and plentiful; so they easily eclipsed the wind as a source of power. It was not until the oil crisis of 1973 that wind power was again taken seriously.

## **Advantages for the Environment**

The oil crisis prompted scientists to consider what would happen when fuel supplies were exhausted. Alternatives such as wind power took on a new appeal. Wind, after all, is inexhaustible. In effect, it renews itself constantly, much as the Bible said of it: "Round and round it is continually circling." (Ecclesiastes 1:6) Wind power is also much easier on the environment than fossil fuels, which contribute to fearful phenomena such as acid rain and may intensify the greenhouse effect. Wind energy produces no chemical emissions whatsoever.

And while wind is not as concentrated a form of energy as gas, coal, or oil, it has surprising advantages. For example, picture a wind turbine turning slowly in a gentle ten-mile-an-hour breeze. Suddenly the wind picks up, doubling to 20 miles per hour.

How much more energy is the turbine now drawing from the wind? Double the amount? No. *New Scientist* magazine explains: "Wind energy varies as a cube of the wind speed." So when the wind speed doubles, it provides eight times the power! Even a small increase in wind speed thus means a large boost in energy output from a wind turbine. To take full advantage of this cube law, as it is called, wind turbines are commonly placed on hilltops, where wind accelerates as it rushes over.

Another appealing aspect of wind power is that it is a fairly decentralized system. A windmill can bring the source of energy close to the user. The machines are quick to install and easy to move. Wind is not mined, shipped, or bought. This means that the power is not difficult to distribute, especially compared to crude oil, which has to be shipped in large bulk carriers. Accidents involving such carriers have led to enormous environmental disasters time and time again—such as the Alaskan oil spill of 1989. Wind turbines have no such disadvantages.

#### Some Drawbacks

This does not mean that wind power is a panacea for mankind's energy problems. One major challenge lies in the unpredictability of the wind. It can change direction at any time. Researchers have long looked for solutions to this problem. One answer was devised in the 1920's, when the French engineer Georges Darrieus developed a wind turbine with a vertical axis. It looks much like a huge mixer, and it operates regardless of the direction of the wind. Variations of this odd-looking contraption are in operation today. However, wind can also stop altogether at any time. And at the other extreme, sudden gales can damage the rotor blades and turbine.

Surprisingly, some of the most vocal objections to the use of wind power concern the environment. For one thing, the high-tech wind turbines of today are a far cry from

**Thousands of wind turbines generate electricity in many countries**



the picturesque, quaint structures of yester-year. The large ones are as much as 300 feet tall; the medium ones 130 feet. Few would describe them as pretty. True, many high-tension lines and radio towers may be that tall, but the whirling blades of a wind turbine draw a good deal more attention.

Then there is the matter of noise. Some object strenuously to having wind turbines in their vicinity because of the noise that they generate. Yet, interestingly, one study found that a medium-sized turbine in Cornwall, England, produces about the level of noise you would hear if a car traveling at 40 miles per hour passed 20 feet away from you. This sound level drops dramatically with distance though. A person 1,000 feet away hears no more noise than he would hear in an average library. What is more, the wind that makes the turbine spin tends to mask the noise. Admittedly, however, when there are hundreds of wind turbines at one location—or thousands as there are at California's Altamont Pass—noise can be a significant problem.

Another problem involves birds. A bird protection organization in the Netherlands recently warned against building wind farms where birds feed and breed—when it is

dark or foggy outside, they might crash into the rotor blades. According to one estimate, on a Dutch wind farm with 260 turbines, up to 100,000 birds a year could be killed in this way. However, other studies indicate that wind turbines have little effect on bird life.

#### An Insurance Policy?

Despite these obstacles, it is clear that wind power can make an important contribution to reducing world consumption of fossil fuels. In his book *Wind Energy Systems*, Professor Gary L. Johnson of Kansas State University, U.S.A., explains that wind power could work together with more conventional generation systems. Used in that way, he says, "wind generators may be considered as somewhat of an insurance policy against serious fuel supply problems."

Before long, man may be in sore need of such an insurance policy. The news media often mention man's endless quest for fuel. As he mines for coal and drills for oil and gas, he not only depletes these irreplaceable commodities but in some places also fouls his own nest by putting them to use! Meanwhile, the wind blows on—clean, endless, and, for the most part, still ignored.

**Hundreds of these graceful monuments are still left in the Netherlands**



## Young People Ask...



# Why Is Everyone Getting Married but Me?

**"I wish I were getting married. Then I'd be happy."—Cheryl.\***

IT IS only natural to want to be married. God endowed man and woman with a natural attraction between the sexes. And he established marriage as a permanent union between a man and a woman.—Genesis 1: 27, 28; 2:21-24.

Understandably, then, you may feel somewhat discouraged or even left out if you are

not yet married—especially if many of your peers have already entered into matrimony. Well-meaning friends can add to the pressure. “I am 24 years old and single, and I am not currently dating anyone,” says Tina. “It seems that everyone else is so concerned that I’m not married that I’m getting a complex about it. They make me feel like an old maid or like there is something wrong with me.”

For some persons singleness can begin to seem like a wall, an insurmountable barrier, that separates them from happiness. With each passing year, it may feel as if another course of bricks is being laid on top of that wall. A youth can start feeling that he or she must be unattractive or undesirable. Says a young woman in Italy named Rosanna: “Often I feel alone and useless; it seems that I have no chances of getting married.” Young men can have similar feelings. Frank, for example, began to feel that all his friends became more interesting and sophisticated after they got married. He began to wonder if marriage might do the same for him.

Do you find yourself thinking along similar lines? If you are single, do you sometimes wonder if there is something wrong with you or if you may be forever doomed to a life of singleness?

### Marriage—Myth Versus Fact

First of all, let’s examine the popular belief that marriage automatically opens the door to happiness. It is true that marriage can and often does contribute to one’s happiness. However, simply being married does not make one happy. Even the best of marriages bring some degree of ‘tribulation in the flesh.’ (1 Corinthians 7:28) Marital happiness comes about only through continual self-sacrifice and hard work. Interestingly, the greatest man who ever lived, Jesus Christ, was single. Would anyone call him unhappy? Hardly! His joy came from doing Jehovah’s will.—John 4:34.

\* Some of the names have been changed.



***It's easy to feel left out when one's peers are getting married***

Many youths are shell-shocked when faced with these grown-up responsibilities.

Some also believe that marriage is the key to popularity. But there is no guarantee that others will crave your company—or that of your mate—simply because you are married. People will like you if you are kind, generous, and unselfish, whether you are married or single. (Proverbs 11:25) And even if being a couple makes it a little easier to fit in with married friends, a husband and wife must remember that they are “one flesh.” (Genesis 2:24) Their main concern must be how they get along with each other—not with their friends.

**Ready for Marriage?**

Of course, even if you see the reasonableness of these points, you may still feel discouraged at times. An ancient proverb put it this way: “Expectation postponed is making the heart sick.” (Proverbs 13:12) Young Tony, for example, found himself in a state of near desperation because he was single. He began to feel that he was ready to marry *anybody*. A young girl named Sandra likewise became discouraged every time she learned about a budding romance; she would wonder when her turn was going to come.

Before you allow yourself to fall into a pit of gloom, ask yourself, ‘Am I really ready for marriage?’ Frankly, if you are a teenager, the answer may well be an emphatic no! In the United States, most teen marriages fail within five years.\* Of course, some youths may be exceptionally mature for their age and be able to make a success of marriage.

\* See the article “Young People Ask . . . Married Too Soon—Can We Succeed?” in our April 22, 1995, issue.

Another myth is that marriage is a guaranteed cure for loneliness. It is not! Lamented one married Christian man: “My wife has never confided in me or had a meaningful talk with me, ever!” Some Christian wives have similarly complained that their husbands fail to communicate or that they seem more interested in their jobs or friends than in them. Sad to say, being married but lonely is all too common.

Then there are those who see marriage as an escape from family problems. Says one young married woman: “I think my parents should have given me a chance to grow up. But they didn’t allow me to have a boyfriend or to go out . . . If my parents had given me a chance, I think I wouldn’t have gotten married at 16. But I wanted to show them.”

You may feel that life at home is too restrictive. But marriage brings responsibilities that can greatly limit one’s personal freedom. Think of what is involved in holding a job, paying bills, doing home and auto repairs, cooking, cleaning, washing clothes, and perhaps even raising children! (Proverbs 31:10-31; Ephesians 6:4; 1 Timothy 5:8)

But that does not necessarily mean that *you* should marry. Have you honestly considered whether you are prepared to take on the responsibilities of marriage?

An honest self-examination may prove quite revealing. For example, how mature and responsible are you? Are you able to save money, or do you spend it as soon as you get it? Do you pay your bills on time? Are you capable of holding a job or of managing a household? Do you get along well with others, such as with workmates and parents, or are you in constant conflict with them? If so, you may find that getting along with a marriage mate will be very difficult.

If you are still a teenager, you may well discover that you need a few more years of experience in order to attain the maturity and stability needed to make a good husband or a good wife. Realizing this fact may help you readjust your expectations and view marriage as a *future* possibility. This may help you to be more ‘settled in heart’ about your single state, at least for the time being.—1 Corinthians 7:37.

### Proper Preparation

What, though, if you believe you are past “the bloom of youth” and feel you are ready to get married? It can be discouraging if potential marriage mates are few or if you are rejected every time you express interest in someone. But does this necessarily mean you are undesirable? Not at all. King Solomon got absolutely nowhere with a young girl with whom he had fallen in love—and he was one of the wealthiest, wisest men who ever lived! The problem? The girl’s heart was simply not inclined toward having romantic feelings for him. (Song of Solomon 2:7) Similarly, it may be that you have not yet met someone with whom you are truly compatible.

Do you feel that you are simply too plain looking to attract someone? True, good

looks have their advantages, but they are not everything. When you think of the married couples you know, isn’t it true that among them are people of all heights, shapes, and degrees of attractiveness? Besides, someone who is truly God-fearing will primarily be concerned with what you are like in “the secret person of the heart.”—1 Peter 3:4.

Of course, you should by no means ignore your physical appearance; it is only reasonable to try to look your best. Slovenly dress and grooming can give others the wrong impression of you.\* Also, poor conversation skills or flaws in your personality may turn others off before they get to know you. A mature friend or a parent can tell you if a few adjustments in these areas are in order. The truth may be painful, but accepting it can perhaps help you to make adjustments and thus be more appealing to others. —Proverbs 27:6.

In the final analysis, however, your worth, or value, as a person is not determined by whether or not you are married. What really counts is how God views you, and he “sees what the heart is.” (1 Samuel 16:7) The focus of your concern should therefore be on gaining Jehovah’s approval and not on getting married. Try not to let the latter dominate your thoughts and conversation. Carefully monitor your associations, choice of music, and entertainment.

True, the desire to be married may not go away, but don’t panic. Exercise patience. (Ecclesiastes 7:8) Instead of viewing your singleness as a curse, take full advantage of the freedom singleness offers and the opportunities it presents to serve God without distraction. (1 Corinthians 7:33-35, 38) Marriage may come along for you in due time—perhaps even sooner than you think.

\* For specific suggestions along these lines, see chapters 10 and 11 of the book *Questions Young People Ask—Answers That Work*, published by the Watchtower Bible and Tract Society of New York, Inc.

## WATCHING THE WORLD

### Blood Money

In 1994 the German public was aghast when they learned that some 2,500 persons had been infected with HIV through blood transfusions and blood products. (See *Awake!* of April 22, 1994, page 28.) In a parliamentary debate in January 1995, reports the *Süddeutsche Zeitung*, the federal minister of health asked the victims "for forgiveness in the name of the federal government" for errors that had increased their hardship. In the debate it was said that the pharmaceutical industry and the doctors were chiefly responsible and that the German Red Cross had damaged its image by striving too hard to become "a manufacturer of medicines from blood." One woman who was infected with HIV by her late husband lamented: "At least 700 hemophiliacs could still be alive if the [pharmaceutical industry] had then thought about more than just making money."

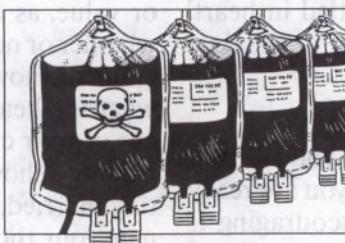
### A Dearth of Priests

Once renowned for exporting Catholic missionaries, Spain is now struggling to supply sufficient priests for local needs. The Madrid newspaper *El País* reports that the total number of priests in Spain is shrinking by 150 each year. Church authorities fear that the 2,000 seminary students presently enrolled will not supply enough priests to cover future pastoral demands. Last year only 216 priests were ordained—73 fewer than in 1993—and 70 percent of the Spanish clergy are over

50 years of age. On the other hand, recently Jehovah's Witnesses in Spain have seen their pioneer ranks increase by 300 every year. Pioneers are unpaid ministers who spend at least 90 hours each month preaching the good news of the Kingdom.

### More Blood Transfusion Dangers

According to *The Canberra Times* of Australia, the Red Cross has warned doctors that contaminated blood can transmit a lethal bacterial infection and that to date there is no certain way to screen out the organism. Referring to an account in *The Medical Journal of Australia*, the *Times* says that four people in the state of New South



Wales died from this bacterially infected blood between 1980 and 1989. The newspaper article further stated: "The problem is that the bacterium, *Yersinia enterocolitica*, can breed rapidly in packets of whole blood even when the blood is close to freezing. People who have had gastric infections weeks before donating blood can occasionally pass on the organism, which can then breed to great numbers while the blood is in storage and awaiting transfusion. Transfused patients can suffer rapid toxic shock and death."

### Canada's Obese Children

"Many nutritionists, pediatricians and researchers" say that "frazzled parents are feeding their children unbalanced, over-processed and high-fat meals," reports *The Globe and Mail*. Often when both parents work, life is hectic, leaving very little time, if any, for the family to eat nutritious meals together. The result? According to expert estimates, "at least 20 per cent of Canadian children are obese because of a combination of a high-fat diet and lack of exercise," says *The Globe*. Dr. Stan Kubow, associate professor in the school of dietetics and nutrition at McGill University in Montreal, says balance is needed. He said parents need to "make sure there are dairy products, protein, fruits, vegetables and fibre in their [children's] diet." One concerned researcher asked: "If you don't care about your health, what do you care about?"

### Asbestos Alert Continues

Thousands of British construction workers will die from asbestos-related cancers because of a miscalculation by safety authorities, reports the magazine *New Scientist*. Years ago, in the 1960's, when medical experts were saying that asbestos fibers were a health hazard, the British government introduced factory regulations to limit the concentration of these fibers in the air. However, researchers now find that the employees at highest risk were carpenters, electricians, plumbers, and gas fitters, who worked unprotected with asbestos-related

products. Since one type of lung cancer takes 30 years to develop, the error has only recently come to light. Presently it is unknown which building procedures or asbestos products are the most dangerous. Consequently, Britain's Health and Safety Executive urges construction workers to exercise extreme caution if they discover a substance containing asbestos and to report their concerns to their employers, who should investigate the materials and provide adequate protection.

#### Who Is the Winner?

"In the gambling business, there is no crisis," reports *Veja*. The magazine says that Brazilians spend about \$4 billion (U.S.) annually on lotteries and other forms of gambling. That is more than the annual earnings of a gigantic national automobile industry! An attraction of bingo is said to be its social aspects. "In bingo it is possible to talk with strangers or acquaintances, eating, drinking, and cheering while trying one's luck," the magazine reported. But who is the winner? "In no other kind of gambling are the returns of the establishment so high," claims mathematician Oswald de Souza. "The winner of the round [in bingo] receives only 45 percent of all the money spent on bets."

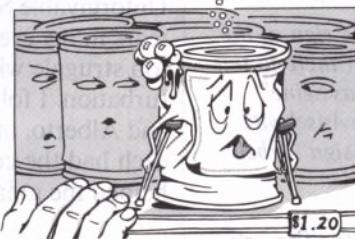
#### Problems Outstrip Remedies

Despite the fact that the government of India finances the largest nutrition program in the world, there are still 250 million people in that country suffering from varying degrees of malnutrition. A United Nations Children's Fund report shows that in spite of the efforts being

made, 43.8 percent of the children in India suffer from moderate protein energy malnutrition. In addition, 6.6 million are mildly retarded and have some motor handicaps, 2.2 million are afflicted with cretinism, and each year 60,000 become blind due to vitamin deficiency. Among preschool children 56 percent have iron deficiency, and children are among the 40 million people who have goiter.

#### Buying Food in Dented Cans

"Grocery shoppers, trying to save money, might be buying or keeping cans which should be thrown out as potentially hazardous," warns the *Winnipeg Free Press*. "A lot of dents on cans are acceptable, but some aren't," Peter Parys of the city's health department said. "Usually the cans are safe at the time



of packing; the damage comes further down the line." A quick list of what to discard, according to the city's health department, includes cans that have rust in their seams, rust on the can top or body that cannot be easily wiped off, or a squishy sound when shaken, as well as cans that are bulging or swollen in any way, cans with leaks, and cans with a missing or outdated label. The newspaper report cautions: "Once the seal is broken, cans become perfect breeding grounds for salmonella and staphylococcus. Each

can cause diarrhea, vomiting, and cramps."

#### Low Birthrates

Many couples in Eastern Europe are putting child-bearing on hold because of their feelings of financial and employment insecurity. *The New York Times* notes that this "insecurity has led not only to a sharp decline in the birth rate but also to a drop in the marriage rate and a more than tenfold increase in sterilizations." The *Times* adds that according to demographers "such precipitous declines have never before been seen except in times of war, plague or famine." To stem a similar tide, the governments of Belgium, Luxembourg, Hungary, Poland, and Portugal have for some time provided payments as an incentive to have babies. More recently, the government of the German state of Brandenburg began offering \$650 for every newborn.

#### Long-Lasting War Effects

The casualties of war in former Yugoslavia include many more than those who have been killed or maimed by bullets or bombs. A recent study reveals that "the hundreds of tons of toxic substances released into the environment by fires, explosions and chemical leaks will have serious health effects," says *The Medical Post*. These chemicals and toxic metals are polluting the rivers and may even be contaminating underground bodies of water. According to the *Post*, experts are warning that there will be "a significant increase in the number of children with congenital malformations as a result of their parents drinking water contaminated with toxic substances."

## FROM OUR READERS

**Conversation** Thank you for the article "Conversation Is an Art." (April 8, 1995) I have been struggling with shyness for a long time. But I now realize that I am not the only person who has this trouble. I will put your suggestions to good use.

A. L., United States

Your suggestion to read articles in *The Watchtower* and *Awake!* really works. You'd be surprised how much there is to talk about when you do so!

V. M. J., United States

**Concentration Camp** An acquaintance of mine read the article "My Hate Turned to Love." (January 8, 1995) He claims that contrary to what the article stated, there was no sign "*Arbeit Macht Frei*" (Work Makes Free) in the Buchenwald camp.

H. J. Z., Germany

*Please pardon the inaccuracy. The sign at the entrance to Buchenwald can be seen there to this day, and it actually reads "Jedem das Seine" (Each According to His Merits). The Auschwitz and Sachsenhausen camps had the sign "Arbeit Macht Frei."*—ED.

**Autism** Thank you very much for the article "Autism—Meeting the Challenges of a Puzzling Disorder." (February 8, 1995) Finally, I can understand the sickness that afflicts my daughter and know that it was not the result of something I did in bringing her up. My service to Jehovah gives me the strength to deal with her situation.

M. H., Switzerland

A lot of superstitious causes have been attributed to autism, such as a curse from ancestors or retribution for past deeds. What you have written will help create better understanding of this disorder. Thank you for such educational articles.

M. A., Nigeria

**Orchids** I'm an orchid lover! In fact, I have orchids in my garden and a picture collection of them. Thank you for publishing the article "In Search of Orchids in Europe." (January 22, 1995) I hope it's not the last article you publish on this subject.

R. M., Philippines

**Safe Driving** I am in my mid-40's and was never allowed to drive because of epilepsy. After brain surgery, I got the green light from my neurologist to apply for a driver's license! The article "Are You a Safe Driver?" (February 8, 1995) helped me appreciate the importance of having the right attitude while driving. It came right after I got my license!

G. S., United States

**Unforgivable Sin** Thank you for the article "Young People Ask . . . Have I Committed the Unforgivable Sin?" (November 8, 1994) I had tears in my eyes while reading it because I too struggle with this unclean habit of masturbation. I followed the examples of Marco and Alberto, mentioned in the article, who each had the courage to talk to an elder. This helped me greatly.

A. M. C., Brazil

Masturbation is one of the toughest fights a young Christian could have. I have felt miserable and downhearted many times. The article encouraged me to keep struggling to win this battle.

F. G. M., Mexico

I got involved in loose conduct with the young man I was hoping to marry; it destroyed our relationship. I was severely depressed and had many tearful days and nights. I truly thought I would not be forgiven. Reading these articles restored my faith in Jehovah and his ability to forgive and forget.

L. C., Australia

# *Can You Die of a Broken Heart?*

SADLY, it's an all too common occurrence: An apparently healthy elderly person who has just lost a mate in death collapses and dies within a few days or weeks. The cause of death? "A broken heart," say friends.

This may be more than a figure of speech. Researchers have long known that unresolved stress floods the heart with chemicals that can throw it into an irregular beat or even convulsions. But just how this process starts in the brain has remained a mystery.

Stephen M. Oppenheimer, a neurologist at Johns Hopkins University medical school in Baltimore, Maryland, U.S.A., believes he has identified a part of the brain that links the heart with the emotions. The insular cortex is a small part of the brain where the autonomic nervous system, which controls such functions as breathing and heartbeat, meets the limbic system, which deals with emotions, such as anger, fear, and pleasure. Dr. Oppenheimer found that stimulation of the insular cortex in rats resulted in heart muscle damage similar to that seen in humans with sudden cardiac fibrillation. Stimulation of the insular cortex in humans has also been shown to produce changes in heart rate and blood pressure. These findings suggest that it is indeed possible to die of a broken heart.

Some say that a broken heart was a factor in the death of Jesus Christ, of whom it was prophesied: "Reproach itself has broken my heart, and the wound is incurable." (Psalm 69:20) Are these words to be understood literally? Perhaps so, for the hours preceding Jesus' death were agonizing—not

only physically but also emotionally. (Matthew 27:46; Luke 22:44; Hebrews 5:7) Furthermore, a broken heart may explain why "blood and water" flowed from a spear wound inflicted on Jesus just after his death. A rupture of the heart or a major blood vessel could discharge blood either into the chest cavity or into the pericardium—a fluid-containing membrane that loosely encases the heart. In either location a puncture could cause the flow of what would appear to be "blood and water."—John 19:34.

Of course, other factors were undoubtedly involved in Jesus' relatively swift death, including the manner of his impalement and the abuse he endured prior to it. How grateful we are that under these intense circumstances, Jesus maintained his loyalty! As a result, he was highly exalted by his Father, Jehovah. (Philippians 2:8-11) Moreover, he made it possible for us to live forever on a paradise earth.

—John 17:3; Revelation 21:3, 4.





# It Made Her Feel Better

TARA PATEL writes a column entitled "On My Own" in *The Daily*, a newspaper published in Bombay, India. In January she wrote about the article "Is Your Life Boring? You Can Change It," which appeared in the January 22, 1995, *Awake!* "I've got a subscription to it," she said of *Awake!*, "although I tend to dismiss it as one of the goody, goody magazines of the world."

However, she added: "Getting more and more involved with the article, I muttered back, of course, my life is boring, terribly boring. Don't even ask how boring! So what's the solution?" She then went on to quote *Awake!* at length, concluding: "Keep learning. Have personal goals. Be creative. Do something with your hands. Have a purpose in life. Take God into consideration.

"All that. Goody, goody or not, come to think of it, it's sound advice. Somehow this *Awake* mag[azine] makes me feel better. Subscribe to it if you wish."

Then Tara Patel provided the address in India for obtaining more information.