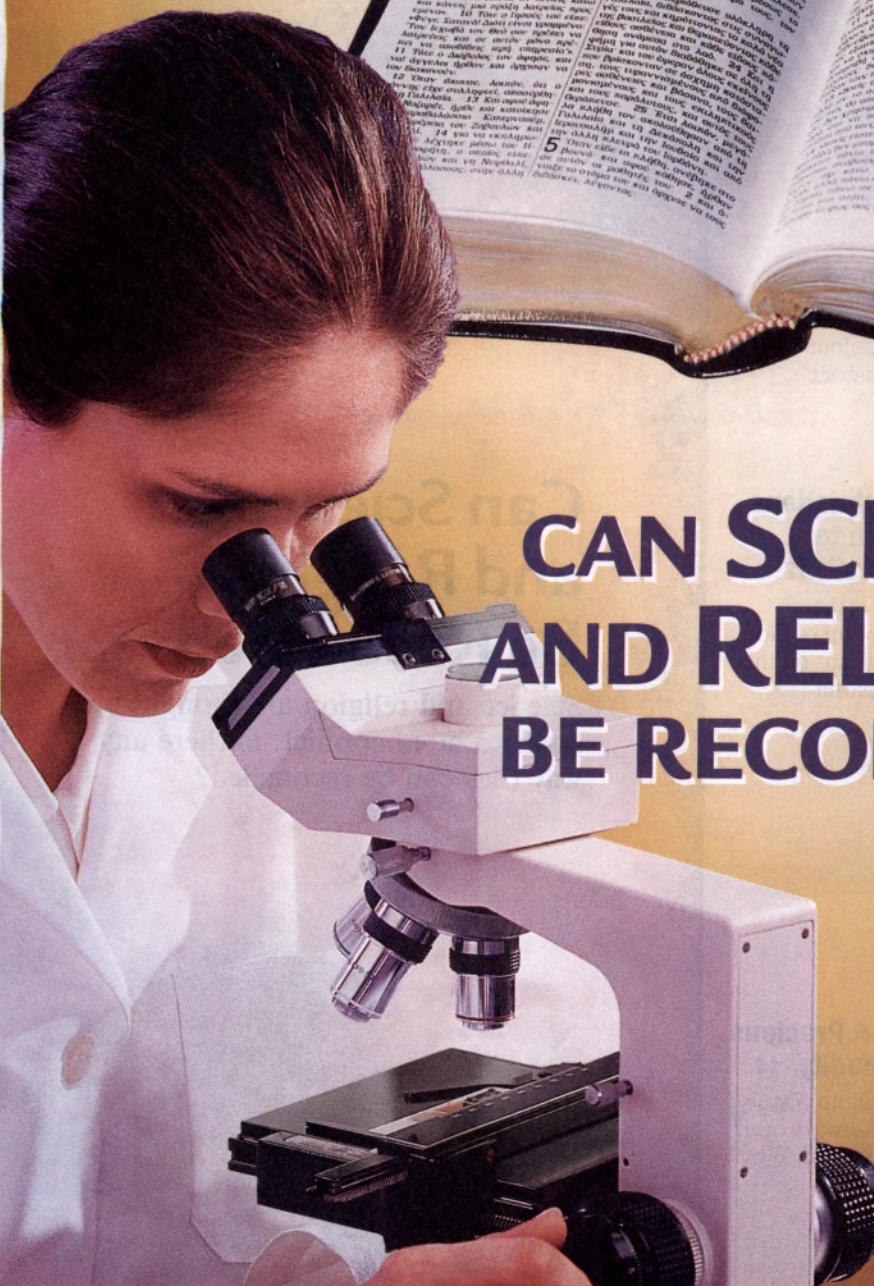
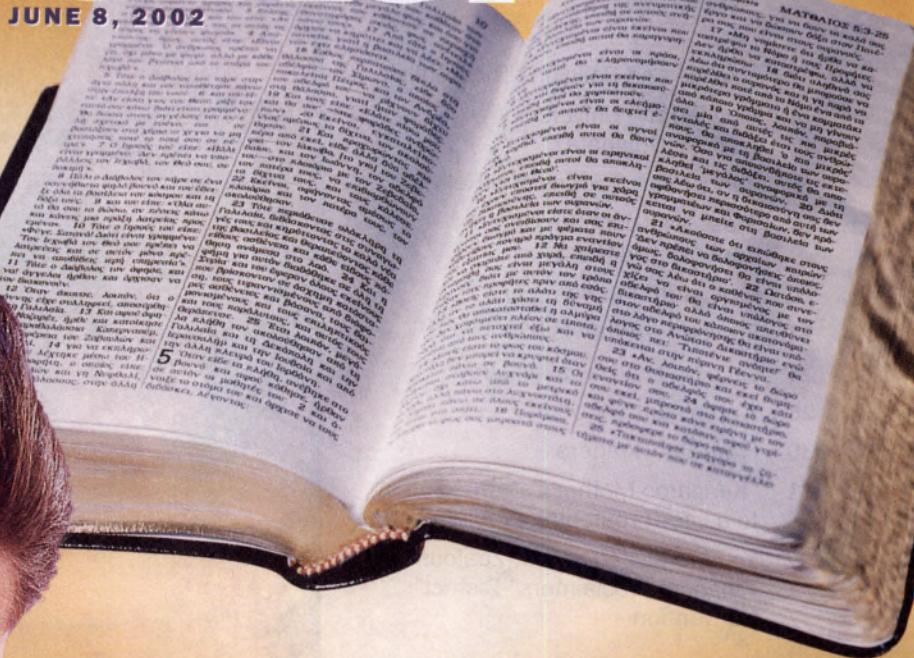


Awake!

JUNE 8, 2002



CAN SCIENCE
AND RELIGION
BE RECONCILED?



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Awake!

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Science and religion are thought by some to be in conflict. Is there any way they can be reconciled?

Science and Religion

THE CONFLICT



Galileo taught scientific truth, for which he was censured by the church

RELIGION and science are sometimes assumed to be mortal enemies. To some they appear locked in a struggle of such magnitude that it may seem that one will triumph only by the death of the other.

In one camp are some scientists, such as chemist Peter Atkins, who feel that reconciling religion and science is "impossible." Atkins says that to believe "that God is an explanation (of anything, let alone everything) is intellectually contemptible."

In another camp are religious people who blame science for the destruction of faith. Such individuals hold to the opinion that science as practiced today is a deception; its facts may be correct, but the misinterpretation of those facts undermines the beliefs of the faithful. For instance, biologist William Provine says that Darwinism means "no ultimate foundation for ethics; no ultimate meaning for life."

However, some of the conflict has developed because of false or unprovable assertions originating from both sides. For centuries, religious leaders have taught mythical legends and erroneous dogmas that are at odds with modern scientific findings and not based on inspired Scripture. For example, the Roman Catholic Church condemned Galileo because he concluded, correctly, that the earth revolves around the sun. Galileo's view in no way contradicted the Bible, but it was contrary to what the church taught at the time. On the other hand, scientists are at fault when they teach as fact the unprovable theory that life evolved from inanimate matter independent of God. They ridicule religious faith as unscientific.

Is it possible, then, to reconcile science and religion? Yes, it is. Actually, proven science and true religion complement rather than contradict each other.

"Is religion best understood as an infectious disease of the mind?"
—Biologist Richard Dawkins.

How Did the Universe and Life Originate?

“Science without religion is lame, religion without science is blind.”

—Albert Einstein.

OURS are times of astonishment on a scale previously unknown. New discoveries from space are forcing astronomers to revise their views of the origin of our universe. Many people are fascinated with the cosmos and are asking the ancient questions that are raised by our existence in it: How did the universe and life come about and why?

Even if we look in the other direction—within ourselves—the recent mapping of the human genetic code raises the questions: How were the multitudes of life-forms created? And who, if anyone, created them? The sheer complexity of our genetic blueprint moved a U.S. president to say that “we are learning the language in which God created life.” One of the chief scientists involved in the genetic decoding humbly remarked: “We have caught the first glimpse of our own instruction book, previously known only to God.” But the questions persist—how and why?

“Two Windows”

Some scientists claim that all the workings of the universe can be explained by ratio-

nal analysis, leaving no room for divine wisdom. But many people, including scientists, are not comfortable with that view. They attempt to comprehend reality by looking to both science and religion. They feel that science deals with the how of our existence and of the cosmos around us, while religion deals principally with the why.

Explaining this dual approach, physicist Freeman Dyson said: “Science and religion are two windows that people look through trying to understand the big universe outside.”

“Science deals with the measurable, religion deals with the immeasurable,” suggested author William Rees-Mogg. He said: “Science can neither prove nor disprove the existence of God, any more than it can prove or disprove any moral or aesthetic proposition. There is no scientific reason to love one’s neighbour or to respect human life . . . To argue that nothing exists which cannot be proved scientifically is the crudest of errors, which would eliminate almost everything we value in life, not only God or the human spirit, but love and poetry and music.”

Awake!®

THIS JOURNAL IS PUBLISHED for the enlightenment of the entire family. It shows how to cope with today's problems. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it always stays politically neutral and does not exalt one race above another. Most important, this magazine builds confidence in the Creator's promise of a peaceful and secure new world that is about to replace the present wicked, lawless system of things.

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The "Religion" of Science

Scientists' theories often seem to rely on premises that require their own kind of faith. For example, when it comes to the origin of life, most evolutionists adhere to ideas that require faith in certain "doctrines." Facts are mixed with theories. And when scientists use the weight of their authority to impose blind belief in evolution, they are in reality implying: 'You are not responsible for your morality because you are merely the product of biology, chemistry, and physics.' Biologist Richard Dawkins says that in the universe 'there is no design, no purpose, no evil and no good, nothing but pointless indifference.'

To uphold such beliefs, some scientists choose to ignore the extensive research of other scientists who contradict the theoretical foundations for their theories on the origin of life. Even if we allow for billions of years of time, the accidental forming of the complex molecules required to form a functional liv-

ing cell has been shown to be a mathematical impossibility.* Thus, the dogmatic theories on the origin of life that appear in many textbooks must be considered invalid.

Belief that life originated by blind chance demands more faith than belief in creation does. Astronomer David Block observed: "A man who does not believe in a Creator would have to have more faith than one who does. In declaring that God does not exist, a person makes a sweeping unsubstantiated statement—a postulate based on faith."

Scientific discoveries can induce a reverential attitude in some scientists. Albert Einstein admitted: "You will hardly find one among the profounder sort of scientific minds without a religious feeling of his own. . . . Religious feeling takes the form of a rapturous amazement at the harmony of natural law, which reveals an intelligence of such superiority that, compared with it, all the systematic thinking and acting of human beings is an utterly insignificant reflection." Yet, this does not necessarily

Can scientific investigation answer why we are here?



Courtesy Arecibo Observatory/David Parker/Science Photo Library

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lead scientists to believe in a Creator, a personal God.

The Limits of Science

It is fitting to have proper respect for scientific knowledge and achievements. However, many will agree that while science involves a way of knowing, it is not *the only* source of knowledge. The purpose of science is to describe phenomena in the natural world and to assist in answering *how* these phenomena occur.

Science provides us with insights into the physical universe, meaning everything that is observable. But no matter how far scientific investigation goes, it can never answer the question of purpose—why the universe exists in the first place.

"There are some questions that scientists can never answer," remarks author Tom Utley. "It may be that the Big Bang happened 12 billion years ago. But *why* did it happen? . . . How did the particles get there in the first place? What was there before?" Utley concludes: "It seems . . . clearer than ever that science will never satisfy the human hunger for answers."

Scientific knowledge gained through such inquisitiveness, far from disproving the need for a God, has only served to confirm what a fantastically complex, intricate, and awe-inspiring world we live in. Many thinking people find it plausible to conclude that the physical laws and chemical reactions as well as DNA and the amazing diversity of life all point to a Creator. There is no irrefutable proof to the contrary.

Faith Has Reality

If there is a Creator behind the universe, we cannot expect to comprehend him or his purposes by using telescopes, microscopes, or other scientific instruments. Think of a potter and a vase that he has formed. No amount of examination of the vase itself can give an answer as to why it was made. For that, we must ask the potter himself.

Molecular biologist Francis Collins explains how faith and spirituality can help fill the void

science leaves: "I would not expect religion to be the right tool for sequencing the human genome and by the same token would not expect science to be the means to approaching the supernatural. But on the really interesting larger questions, such as 'Why are we here?' or 'Why do human beings long for spirituality?,' I find science unsatisfactory. Many superstitions have come into existence and then faded away. Faith has not, which suggests it has reality."

Explaining Why

True religion, in answering the question of why and in dealing with the purpose of life, also offers standards for values, morals, and ethics as well as guidance in life. Scientist Allan Sandage expressed it this way: "I don't go to a biology book to learn how to live."

Millions of people around the globe feel that they have found where to go to learn how to live. They also feel that they have found truly satisfying answers regarding the questions: Why are we here? And where are we going? The answers exist. But where? In the oldest and most widely distributed sacred text, the Bible.

The Bible tells us that God prepared the earth especially with humans in mind. Isaiah 45:18 says regarding the earth: "God . . . did not create it simply for nothing [but] formed it even to be inhabited." And he provided the earth with everything that people would need, not just to exist but to enjoy life to the full.

Humans were given stewardship over the earth, "to cultivate it and to take care of it." (Genesis 2:15) The Bible also explains that knowledge and wisdom are gifts from God and that we are to exercise love and justice toward one another. (Job 28:20, 25, 27; Daniel 2:20-23) Thus, humans can find purpose and meaning in life only when they discover and embrace God's purpose for them.*

How can a modern thinker bridge the apparent chasm between scientific reason and religious belief? What guiding principles might help one to accomplish that?

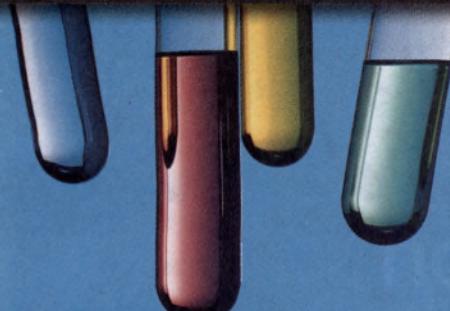
* For a detailed coverage, see the brochure *What Is the Purpose of Life? How Can You Find It?*, published by Jehovah's Witnesses.

What Some Scientists Say

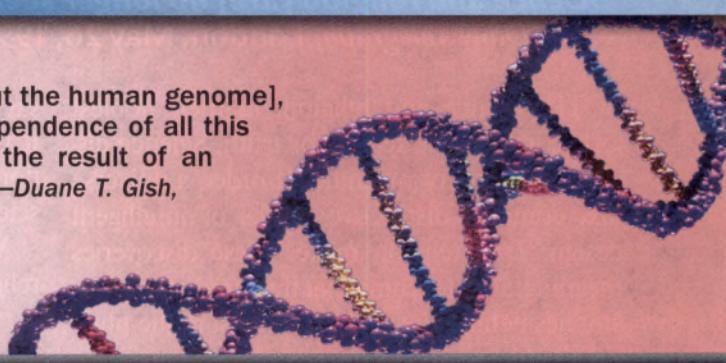
Some people assume that most scientists avoid issues of spirituality and theology because they are not religious or do not wish to involve themselves in the science-versus-religion debate. That does describe some scientists but by no means all. Note what the following scientists have had to say.

"The universe had a beginning but what scientists can't explain is why. The answer is God." "I see the Bible as a book of truth and divinely inspired. There has to be an intelligence behind the complexity of life."—Ken Tanaka, planetary geologist at the U.S. Geological Survey.

NASA/U.S. Geological Survey



"The gap between the various kinds of knowledge (scientific and religious) is rather artificial. . . Knowledge about the Creator and knowledge about creation are closely related."—Enrique Hernández, researcher and professor at the Department of Physics and Theoretical Chemistry, National Autonomous University of Mexico.



"As we develop all this information [about the human genome], it will reveal the complexity, the interdependence of all this material. It will point to the origin as the result of an intelligent creator, an intelligent agent."—Duane T. Gish, biochemist.

Photo: www.comstock.com



"There is no incompatibility between science and religion. Both are seeking the same truth. Science shows that God exists."—D.H.R. Barton, professor of chemistry, Texas.

NASA and The Hubble Heritage Team (STScI/AURA)



RECONCILING Science and Religion

“Science and religion [are] no longer seen as incompatible.”

—The Daily Telegraph, London, May 26, 1999.

BOTH science and religion, in their noblest forms, involve the search for truth. Science discovers a world of magnificent order, a universe that contains distinctive marks of intelligent design. True religion makes these discoveries meaningful by teaching that the mind of the Creator lies behind the design manifest in the physical world.

“I find my appreciation of science is greatly enriched by religion,” says Francis Collins, a molecular biologist. He continues: “When I discover something about the human genome, I experience a sense of awe at the mystery of life, and

say to myself, ‘Wow, only God knew before.’ It is a profoundly beautiful and moving sensation, which helps me appreciate God and makes science even more rewarding for me.”

What will help one to reconcile science and religion?

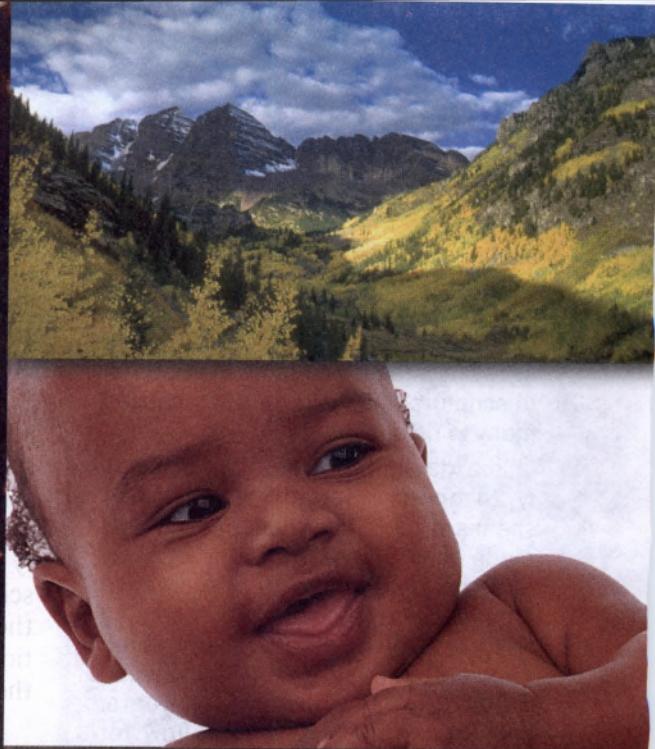
An Enduring Quest

Accept the limits: No end is in sight in our quest for answers about the infinite universe, space, and time. Biologist Lewis Thomas noted: “There will be no end to this process, being the insatiably curious species that we are, exploring, looking around and trying to understand things.



**Ant Nebula (Menzel 3),
from Hubble Space Telescope**

NASA, ESA and The Hubble Heritage Team (STScI/AURA)



We're not ever going to get it solved. I can't imagine any terminal point where everyone will breathe a sigh and will say, 'Now we understand the whole thing.' It's going to remain beyond us."

Similarly, when it comes to religious truth, the reach is boundless. One of the Bible writers, Paul, stated: "Now we see only puzzling reflections in a mirror . . . My knowledge now is partial."—1 Corinthians 13:12, *The New English Bible*.

Partial knowledge concerning both scientific and religious questions, however, does not prevent us from reaching sound conclusions based on the facts we have. We don't need a detailed knowledge of the origin of the sun in order to be absolutely sure that it is going to rise tomorrow.

Science has discovered a world full of distinctive marks of intelligent design

The Creative Days —24 Hours Each?

Some fundamentalists claim that creationism rather than evolution explains pre-human history. They assert that all physical creation was produced in just six days of 24 hours each sometime between 6,000 and 10,000 years ago. But in doing so, they promote an unscriptural teaching that has caused many to ridicule the Bible.

Is a day in the Bible always literally 24 hours in length? Genesis 2:4 speaks of “the day that Jehovah God made earth and heaven.” This one day encompasses all six of the creative days of Genesis chapter 1. According to Bible usage, a day is a measured period of time and can be a thousand years or many thousands of years. The Bible’s creative days allow for thousands of years of time each. Further, the earth was already in existence before the creative days began. (Genesis 1:1) On this point, therefore, the Bible account is compatible with true science.—2 Peter 3:8.

Commenting on claims that the creative days were only 24 literal hours in length, molecular biologist Francis Collins remarks: “Creationism has done more harm to serious notions of belief than anything in modern history.”

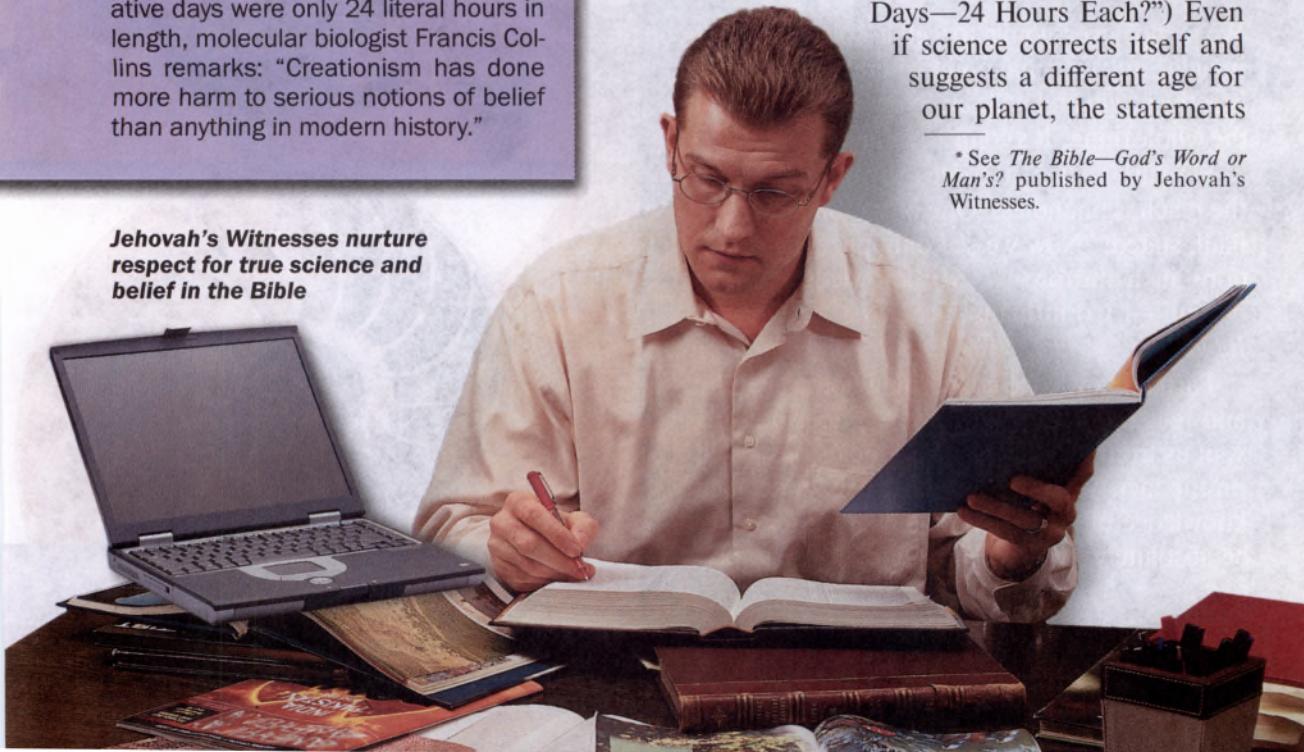
Jehovah's Witnesses nurture respect for true science and belief in the Bible

Let the known facts speak: In the quest for answers, we need to be guided by sound principles. Unless we stick to the highest standards of evidence, we can easily be misled in our search for scientific and religious truth. Realistically, none of us can begin to evaluate all scientific knowledge and ideas, which today fill huge libraries. On the other hand, the Bible provides a manageable compendium of spiritual teachings for our consideration. The Bible is well supported by known facts.*

However, concerning knowledge in general, earnest effort is required to distinguish between fact and speculation, between reality and deception—in both science and religion. As the Bible writer Paul advised, we need to reject “the contradictions of the falsely called ‘knowledge.’” (1 Timothy 6:20) To reconcile science and the Bible, we must let the facts speak for themselves, thereby avoiding conjecture and speculation, and examine how each fact supports and adds to the other.

For example, when we understand that the Bible uses the term “day” to represent various periods of time, we see that the account of the six creative days in Genesis need not conflict with the scientific conclusion that the age of the earth is about four and a half billion years. According to the Bible, the earth existed for an unstated period before the creative days began. (See the box “The Creative Days—24 Hours Each?”) Even if science corrects itself and suggests a different age for our planet, the statements

* See *The Bible—God's Word or Man's?* published by Jehovah's Witnesses.



Has Science Taken the Moral High Ground?

Understandably, religion has been rejected by many people of science for its resistance to scientific progress, its dismal record, and its hypocrisy and cruelty. Professor of microbiology John Postgate points out: "The world's religions have . . . brought the horrors of human sacrifice, crusades, pogroms and inquisitions. In the modern world this darker side of religion has become dangerous. For unlike science, religion is not neutral."

Comparing that with the assumed rationality, objectivity, and discipline of science, Postgate claims that "science has come to occupy the high ground of morality."

Has science really seized the moral high ground? The answer is no. Postgate himself admits that "scientific communities have their share

of jealousy, greed, prejudice and envy." He adds that "a few scientists have shown themselves capable of murder in the name of research, as happened in Nazi Germany and Japanese prison camps." And when *National Geographic* assigned an investigative reporter to find out how a fossil hoax ended up in its pages, the reporter spoke of "a tale of misguided secrecy and misplaced confidence, of rampant egos clashing, self-aggrandizement, wishful thinking, naive assumptions, human error, stubbornness, manipulation, backbiting, lying, [and] corruption."

And, of course, it is science that has given mankind horrific instruments of warfare, such as weapons-grade disease organisms, poison gas, missiles, "smart" bombs, and nuclear bombs.

made in the Bible still hold true. Instead of contradicting the Bible, science in this and many other cases actually provides us with voluminous supplemental information about the physical world, both present and past.

Faith, not credulity: The Bible provides us with knowledge of God and his purposes that cannot be gleaned from any other source. Why should we trust it? The Bible itself invites us to test its accuracy. Consider its historical authenticity, its practicality, the candor of its writers, and its integrity. By investigating the accuracy of the Bible, including statements of a scientific nature and, even more convincingly, the unerring fulfillment of hundreds of prophecies throughout the ages and into our present day, one can acquire firm faith in it as the Word of God. Faith in the Bible is not credulity but a proven confidence in the accuracy of Scriptural statements.

Respect science; acknowledge belief: Jehovah's Witnesses invite open-minded people, both scientific and religious, to share in a sincere quest for truth in both realms. In their congregations the Witnesses nurture a healthy respect for science and its proven findings as well as a profound belief that religious truth can

be found only in the Bible, which forthrightly and with abundant evidence declares itself to be the Word of God. The apostle Paul stated: "When you received God's word, which you heard from us, you accepted it, not as the word of men, but, just as it truthfully is, as the word of God."—1 Thessalonians 2:13.

Of course, as with science, damaging falsehoods and practices have infiltrated religion. Thus, there is true religion and false religion. That is why many people have left organized, mainstream religion to become members of the Christian congregation of Jehovah's Witnesses. They have been disappointed by the unwillingness of their previous religions to disavow human tradition and myth in favor of discovered or revealed truth.

What is more, true Christians find real meaning and purpose in life, based on an intimate knowledge of the Creator, as he is revealed in the Bible, and of his expressed intentions for humankind and the planet we live on. Jehovah's Witnesses have been satisfied with reasonable, Bible-based answers to such questions as, Why are we here? Where are we going? They would be more than glad to share these insights with you.

SHOULD CHRISTIANS PREACH TO OTHERS?

PERHAPS your upbringing or culture dictates that religion not be discussed outside the family or the church. As a result, you may become irritated if someone comes to your home unannounced with a Bible in hand. For some, this viewpoint has been shaped by violent acts in the history of religion that were carried out under the guise of soul-saving campaigns.

The history of many nations tells of mass conversions of people, not prompted by the love of the Christ but, rather, by the sharp edge of the sword. Many people went into hiding, left home and country, or even lost their lives—some being burned at the stake—rather than convert to their persecutors' religion.

The inspired writings of the Bible do not support such forced acts of conversion. So, does that rule out the sharing of one's religious beliefs with others? The Bible itself answers.

Teaching With Authority

First, consider the pattern set by Jesus Christ. He was a masterful teacher who influenced the lives of his listeners. (John 13:13, 15) In the Sermon on the Mount, his teaching was simple but powerful. The effect was that his listeners were “astounded at his way of teaching; for he was teaching them as a person having authority.” (Matthew 7:28, 29) Some 2,000 years later, lives are still being influenced as his teachings are examined. Echoing this viewpoint, Professor Hans Dieter Betz noted that “the influences exerted by the Sermon on the Mount generally far transcend the borderlines of Judaism and Christianity, or even Western culture.”

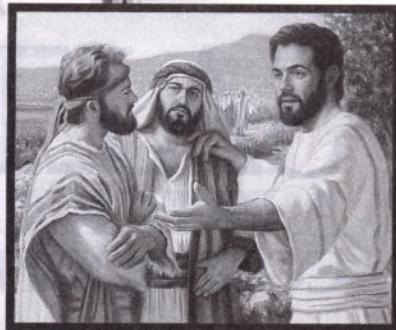
Immediately before his ascension to heaven, Jesus gave a command that ensured that after his death the



teaching work he began would continue and even flourish. (John 14:12) He instructed his disciples to go to people of all nations, “teaching them to observe all the things” that he had commanded. The primary purpose of this assignment was made clear when, in the same statement, Jesus said: “Go therefore and make disciples.”

—Matthew 28:19, 20; Acts 1:8

Consider, too, the example of the apostle Paul. After his own conversion to Christianity, he was not shy about sharing his newfound faith. (Acts 9:17-19, 22) It was Paul’s custom to speak in synagogues and prove “by references that it was necessary for the Christ to suffer and to rise from the dead.” Skillfully “he reasoned with them from the Scriptures” in order to “persuade Jews and



Jesus respected this God-given right by never using his awesome power and authority to force, or coerce, someone into accepting his sayings. (John 6:66-69) He motivated his listeners by using sound reasoning, illustrations, and viewpoint questions, all with the purpose of reaching their hearts. (Matthew 13:34; 22:41-46; Luke 10:36)

Jesus taught his disciples to show this same respect to others.—Matthew 10:14.

It is evident that Paul used Jesus as a model for his ministry. While he persuaded his listeners with sound Scriptural reasoning, Paul respected the feelings and viewpoints of others. (Acts 17:22, 23, 32) He understood that it has to be love for God and for Christ that moves us to serve our Creator actively. (John 3:16; 21:15-17) Our decision is, therefore, a personal one.

Personal Decision

When making major life decisions, such as what home to buy, where to work, and how to raise children, rational people do not do so on a whim. They may research their options, meditate on their findings and, likely, ask for advice. Only after taking these things into consideration will they make a decision.

The decision of how we should worship God deserves more of our time and effort than any other decision in life. It will affect how we live our life now, and more important, it will affect our prospect of eternal life in the future. This was clearly understood by the first-century Christians in Beroea. Even though the good news was expounded to them personally by the apostle Paul, they still carefully examined the Scriptures daily to make sure that what they were being taught was true. As a result, “many of them became believers.”—Acts 17:11, 12.

Today, Jehovah’s Witnesses continue the teaching and disciple-making work arranged by Jesus. (Matthew 24:14) They respect the right of others to have their own religion. But when it comes to sharing their religious beliefs with others, they follow the pattern set out in the Bible. Yes, they use honest reasoning from the Scriptures in what they consider to be a life-saving work.—John 17:3; 1 Timothy 4:16.

Greeks.” According to one authority, the Greek word used for “persuade” means “bringing about a change of mind by the influence of reason or moral considerations.” The result of Paul’s persuasive reasoning was that he “persuaded a considerable crowd and turned them to another opinion.”—Acts 15:3; 17:1-4, 17; 18:4; 19:26.

Coercion or Persuasion—Which?

In modern times, the term “proselytism” has been used to mean forcible conversion of one kind or another. The Bible does not support such a practice. Rather, it teaches that men were created as free moral agents with the privilege and responsibility to choose how they will live their lives. This includes the decision of how to worship God.—Deuteronomy 30:19, 20; Joshua 24:15.

SALT A PRECIOUS COMMODITY

“YOU are the salt of the earth,” said Jesus to his disciples. (Matthew 5:13) The Arabs say, “There is salt between us,” and the Persians speak of a person “untrue to salt” (disloyal or ungrateful). Because of its preservative qualities, the word “salt” came to have connotations of high esteem and honor both in ancient languages and in modern ones.

Salt also became a symbol of stability and permanence. Therefore, in the Bible a binding covenant was called “a covenant of salt,” the parties often eating a meal together, with salt, to seal it. (Numbers 18:19) Under Mosaic Law, salt was to be added to sacrifices offered on the altar, doubtless denoting freedom from corruption or decay.

Interesting Historical Facts

Throughout history, salt (sodium chloride) has been such a precious commodity that wars were even fought over it. One of the contributing causes of the French Revolution was the high tax on salt imposed by Louis XVI. Salt was also used as a valuable medium of exchange. Moorish merchants traded salt for gold, gram for gram, and some central African tribes used slabs of rock salt as money. The English word “salary” comes from the Latin *salarium* (from *sal*, salt), referring to the early Roman soldier’s wages, part of which was an allowance of salt. The Greeks paid for slaves with salt, giving rise to the expression “not worth his salt.”

During the Middle Ages, certain superstitions developed around salt. The spilling of salt was considered to be a portent of doom. For example, in Leonardo da Vinci’s painting of the “Last Supper,” Judas Iscariot is depicted with an overturned saltcellar in front of him.* On the other hand, up until the 18th century, sitting above or below the position of the salt at a banquet table indicated one’s social rank, the honored position being above the saltcellar, near the head of the table.

From early times man learned to extract salt from natural brines, seawater, and rock salt. An ancient Chinese treatise on pharmacology deals with more than 40 kinds of salt and describes two methods of

extracting salt that are amazingly similar to those used today. For instance, solar energy is used to extract salt from seawater at the largest solar salt-works in the world, which is located on the shores of the Bahía Sebastián Vizcaíno in Baja California Sur, Mexico.

Interestingly, it has been estimated that if all the oceans in the world were completely dried up, “they would yield at least 4.5 million cubic miles of rock salt, or about 14.5 times the bulk of the entire continent of Europe above the high-water mark,” according to the *Encyclopædia Britannica*. And the Dead Sea is about nine times as salty as the ocean!

Modern-Day Use of Salt

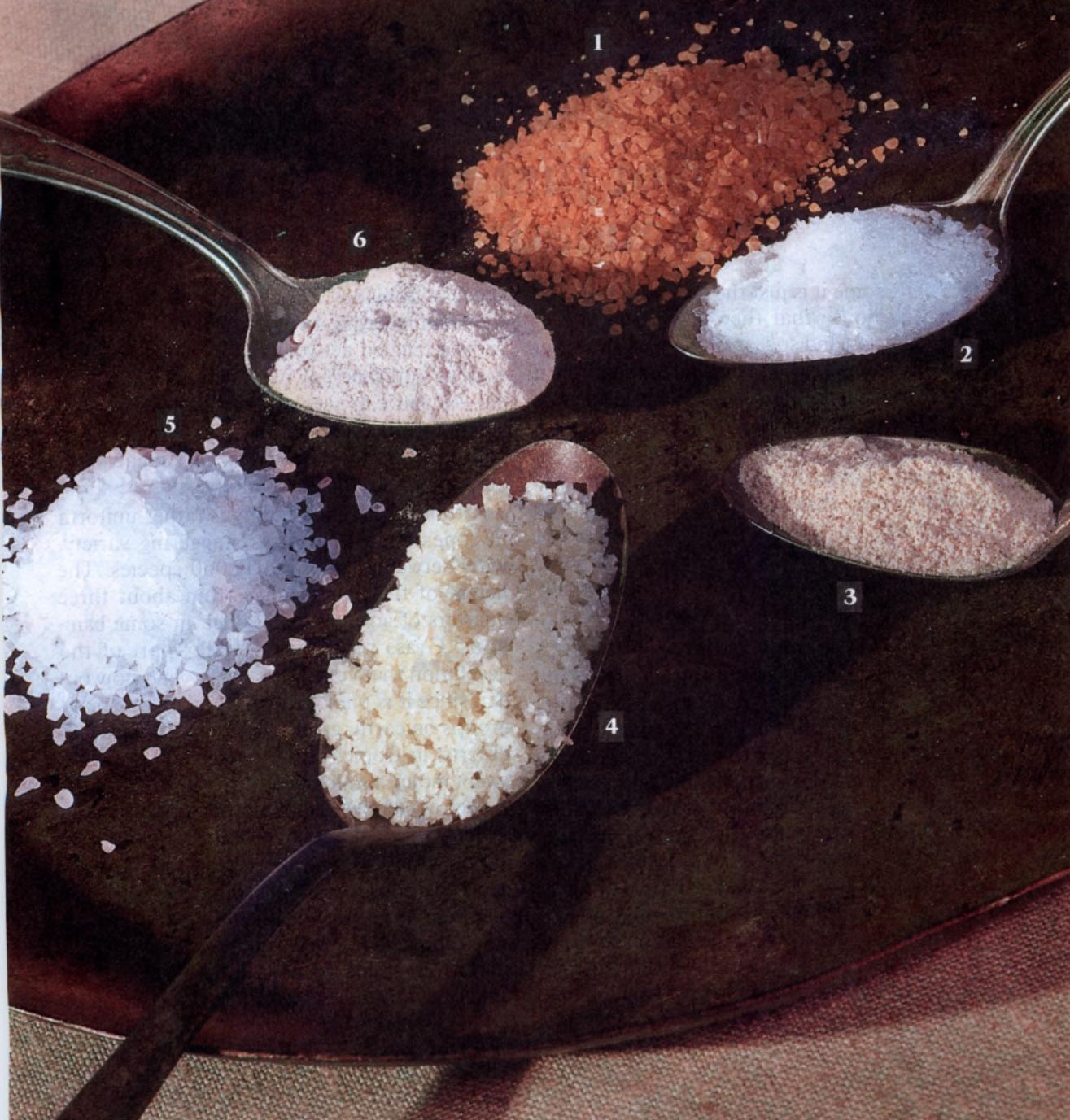
Today salt continues to be a precious commodity, used for seasoning food, preserving meat, and manufacturing soap and glass, among other things. But a particularly interesting use is in the public health field. For example, in many countries of the world, salt is fortified with iodine to combat endemic iodine deficiency, characterized by goiter (an enlargement of the thyroid gland) and in severe cases by mental retardation. Also, some countries add fluoride to salt to prevent dental caries.

While salt is essential for good health—regulating blood volume and pressure—what about the controversial association between salt intake and high blood pressure? Doctors have routinely restricted salt and sodium intake in hypertensive patients. About one third to one half of people with high blood pressure are salt sensitive. In this case a lower salt intake has been shown to lower blood pressure.

Salt certainly adds to the enjoyment of food, as Job indicated when he asked: “Will tasteless things be eaten without salt?” (Job 6:6) We can truly be grateful to our Creator, “who furnishes us all things richly for our enjoyment,” including that precious commodity salt.—1 Timothy 6:17.

* A saltcellar is a dish or shaker for holding salt.

Some of the many varieties of salt (clockwise from top):
(1) 'Alaea sea salt, Hawaii; (2) fleur de sel, France;
(3) organic raw sea salt; (4) sel gris (gray
salt), France; (5) coarse sea salt;
(6) ground black salt, India





Grass

Not Just the Green Beneath Your Feet

FOR some it is just the green stuff outside the house that they have to mow. For farmers and soccer players, on the other hand, it is their workbench. And for children, it is the ideal playground. But does the term grass only refer to the turf of lawns, farms, and playing fields?

If you live in an urban high-rise building, you might assume that you have very little to do with grass of any sort. However, almost all of us have daily contact with some type of grass and the products made from it. What basically is grass? And how do we make use of it?

What Is Grass?

Let us take a closer look at this humble plant. Commonly, all kinds of low, green plants are called grass. In addition to plants scientifically designated as part of the grass family (Gramineae, or Poaceae), some regard sedges and rushes as grass. But only the grass family is said to be true grass. Its members usually have some common distinctive features. Take a good look at what you think is a stem of grass.

Is the stem round and hollow, and does it have nodes, or joints? Are the leaf blades long, flat, and narrow, showing parallel veins and rising out of sheaths that encircle the stem? Do

successive blades arise on opposite sides of the stem, creating two vertical rows? Are the roots a tangled network of tiny threads rather than an outbranching main root? Are the flowers—if you can see any—inconspicuous and small, forming a spike, raceme, or panicle? If your answers have been yes, that plant probably belongs to the grass family.

Although the grass family is rather uniform in appearance, it displays staggering variety, with between 8,000 and 10,000 species. The height of the plants range from about three quarters of an inch to 130 feet, in some bamboos. Grass makes up a major part of the vegetation that covers the earth. And no wonder, since it is one of the most adaptable plant groups on earth, growing in polar regions and deserts, in tropical rain forests, and on wind-swept mountain slopes. Entire vegetation areas—such as steppes, llanos, pampas, prairies, and savannas—are dominated by grass.

Robustness is one of the keys to the success of various grass types. Unlike many other plants, grass grows, not at the tip, but in growth areas above the nodes. And new shoots might start from stems growing horizontally on or under the ground. So when the lawn mower or



Structure of grass plants

Main forms of grass flowers



Spike



Raceme



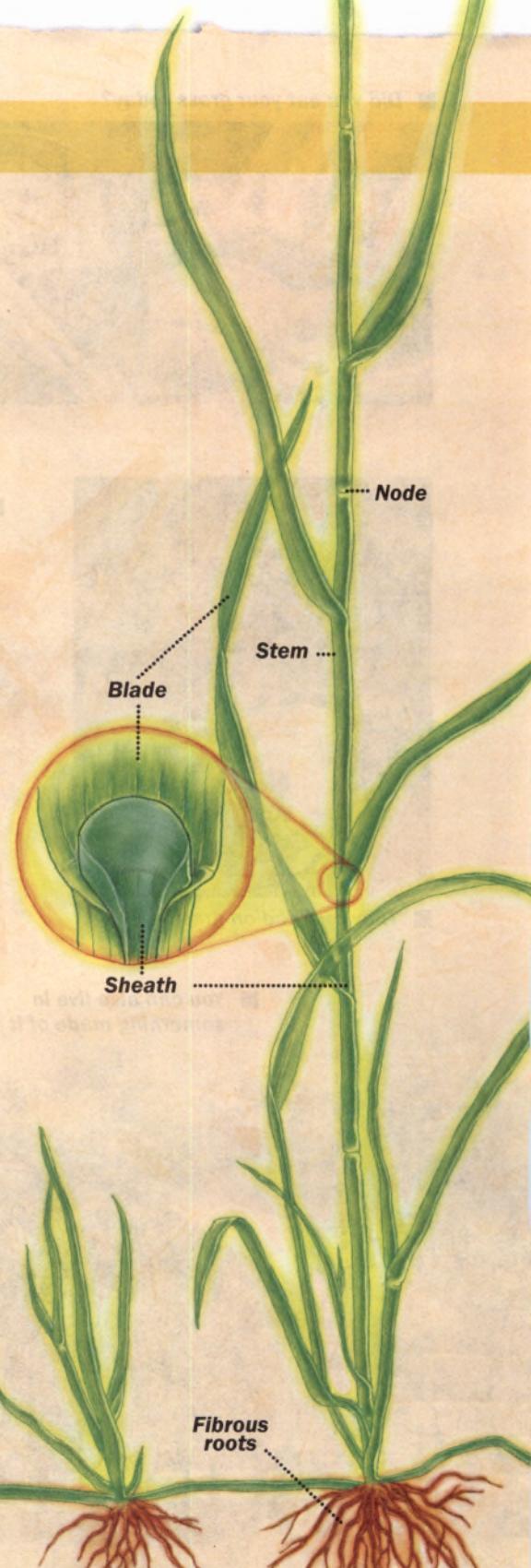
Panicle

the cow's teeth cut away the tip, grass keeps growing, whereas many other plants stop. That is why frequent mowing favors grass at the expense of other plants and can make a lawn dense and beautiful.

Furthermore, with most grasses, if the stem is bent over by the wind or trodden underfoot, it can raise itself erect by growing faster on the side facing the ground. For these reasons grass usually recovers quickly after being damaged, which gives it an edge over other plants in the fight for sunlight. And we can be happy that grass is such a sturdy plant. After all, we depend on it.

A Versatile Plant

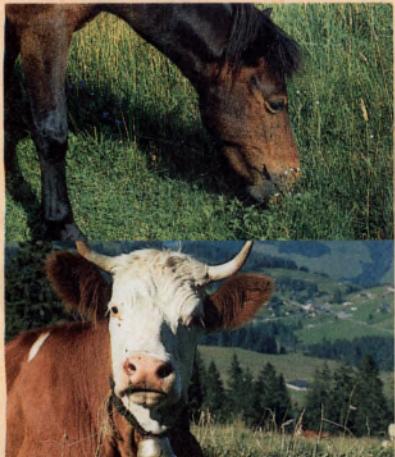
Grass is not only the most abundant but also the most important flowering-plant family on earth. A botanist said that grass is the foundation of our food. It is "like a dam protecting mankind from famine." Try to remember what you ate today. Did you start with a bowl of cereal made with millet, rice, oats, or sorghum? Well,



■ Did you eat your grass today?



■ Or did you drink some?



■ They too feed on grass

■ You can also live in something made of it



then, you ate grass seeds. Or perhaps you had a roll or other kind of bread. The flour used was made from grass kernels—wheat, rye, barley, and other grains are all grasses. Cornflakes and corn pudding as well as tortillas made from corn flour are no exception. Corn, or maize, is—you guessed it—a grass too. You had sugar in your tea or coffee? More than half of all sugar is made from sugarcane, a grass. Even milk and cheese are in a sense processed grass, as that is what cows, sheep, and goats usually feed on.

What about your lunch? Pasta as well as pizza crust are made from wheat flour. Chickens and other fowl are often fed with grain. Cattle are fed all kinds of grasses. Thus, to a great extent, the eggs, poultry, and beef we eat are the result of grass being processed by an animal's metabolism. And you can also drink grass. Aside from milk, many popular alcoholic beverages are made from grass: beer, whisky, rum, sake, kvass, and most vodka.

Now please do not worry that your favorite dish was not mentioned. It is just not possible to list all the foodstuffs made from grass. By some estimates, more than half the calories consumed worldwide come from grasses. No wonder, for grass covers up to 70 percent of all cultivated land!

Grass is not only good for food, however. If your house has walls made of clay and straw, it is the grass that gives them the necessary strength. In different parts of the world, roofs are thatched with grass. In Southeast Asia bamboo is used for scaffolds, pipes, furniture, walls, and many other applications. Mats and baskets are woven from grass, and it provides raw material for glue and paper. Do not forget your clothes. Most animals from which we get wool and leather feed on grass. The grass species *Arundo donax* provides the reed for woodwind instruments, such as the clarinet. No other material has been found that can match the natural reed for that purpose.

Grass covers and adorns much of the earth. And what a beautiful, peaceful, and relaxing

sight is a green meadow or a well-kept lawn! Because of the sheer mass of the green vegetation it produces, grass is a major oxygen supplier. Its fine roots also protect the soil from erosion. Keeping its versatility in mind, we are not surprised to learn that the usage and cultivation of grass has a long history.

History of Grass

We find the first mention of grass in the Bible's creation account. On the third creative day, God said: "Let the earth cause grass to shoot forth." (Genesis 1:11)* All major civilizations have depended on some form of grass. For example, the Egyptians, Greeks, and Romans ate wheat and barley as staple foods; the Chinese, millet and rice; the Indus people, wheat, barley, and millet; the Maya, Aztecs, and Incas, corn. And the endless steppes provided the needed grass for fodder for the horses of the Mongol cavalries. Yes, grass has always been of great importance to mankind.

The next time you see a waving cornfield, a lush green meadow, or just humble blades of grass growing between stones in a sidewalk, you might stop and think of this marvelous and most versatile plant family. You might also be moved to thank its Great Designer, Jehovah God, as the psalmist did in singing: "O Jehovah my God, you have proved very great. . . . He is making green grass sprout for the beasts, and vegetation for the service of mankind, to cause food to go forth from the earth . . . Praise Jah, you people!"—Psalm 104:1, 14, 31-35.

* It may be that the ancient writer of this text did not differentiate between grasslike plants and what are now considered true grasses.

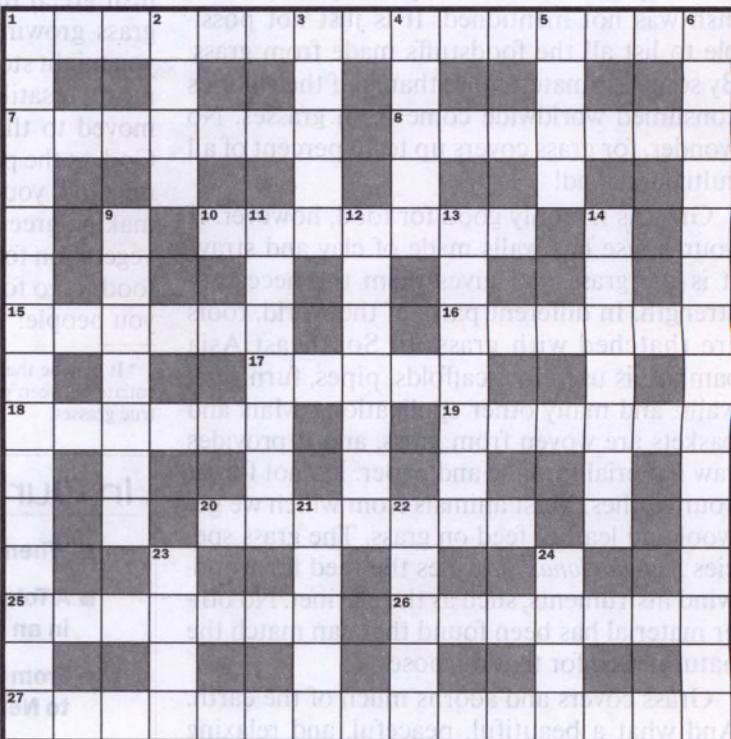
In Our Next Issue

- When All Kinds of Slavery Will End!
- A Tolerant Kingdom
in an Intolerant Age
- From Political Activist
to Neutral Christian

Crossword Puzzle

Clues Across

- What Jehovah declares regarding retributive action [3 words] (Romans 12:19)
- This native of Sharon looked after David's herds that grazed there (1 Chronicles 27:29)
- The designation of Ira the "priest of David" (2 Samuel 20:26)
- Hindered in coming (1 Timothy 3:15)
- A Simeonite whose son Ziza annexed Hamite territory to expand his grazing land (1 Chronicles 4:37)
- Jehovah will not allow his praise to go to these (Isaiah 42:8)
- An island where Paul apparently stopped briefly just before going to Miletus when returning from his third missionary tour (Acts 20:15)
- What Jesus desired to do in regard to his God-given assignment (John 4:34)
- The city where David was anointed as king and had his capital before moving to Jerusalem (2 Samuel 2:1-4)
- First-named son of Ashhur of the tribe of Judah, by his wife Naarah (1 Chronicles 4:6)
- John said that the rainbow that was around Jehovah's throne resembled this precious gemstone (Revelation 4:3)
- Paul evidently stopped here while being taken to Rome as a prisoner (Acts 28:13)
- Poetic phrase referring to Jerusalem [3 words] (Lamentations 2:2)
- The place where David feigned insanity (1 Samuel 21:12-15)
- A city of Asher (Joshua 19:27)
- To take pleasure in (Exodus 30:38)
- After "a sharp burst of anger" over this disciple, Paul and Barnabas separated (Acts 15:36-41)
- It is on the basis of this toward Jesus that one gains everlasting life [2 words] (John 3:16)
- The term by which first-century Christians referred to fellow believers (3 John 14)
- A grandson of Noah through his son Japheth (Genesis 10:4)
- When bringing news to David, he was identified by his running style (2 Samuel 18:27)
- One of the sons born to King David in Jerusalem (2 Samuel 5:15)
- Concerning (Exodus 32:1)
- Exceeding or violating propriety (Psalm 10:3)
- A grandson of Esau through Eliphaz (Genesis 36:11)
- When Moses struck this to bring water to the Israelites, he failed to magnify Jehovah's name and consequently did not enter the Promised Land (Numbers 20:7-12)
- He was noted for driving his chariot "with madness" (2 Kings 9:20)



Clues Down

- Phrase that Nebuchadnezzar used in referring to his prophetic dream [4 words] (Daniel 4:5)

Surveying What Is It?

THE Egyptians called them "rope-stretchers." Who were they? They were an ancient guild responsible for restaking land allotments for tax purposes every year after the banks of the Nile River flooded. These men were the forerunners of the modern-day professionals called land surveyors.

Today surveyors can frequently be seen alongside highways and on construction projects. You may have wondered, though, "What exactly is surveying?"

"Surveying has two main areas of function," says *Science and Technology Illustrated*. They are "(1) to measure what exists, record where it is located, and use the data to make a map or description; or the reverse, (2) to establish landmarks in order to mark boundaries or guide construction according to such a plan or description. Surveying determines, or marks out, the position of points on, beneath, or even above the Earth's surface."

History of Surveying

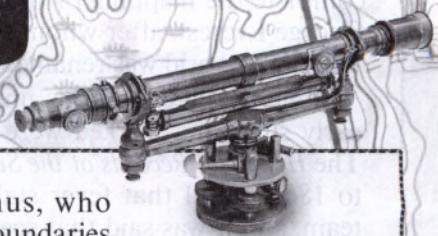
Apparently, the first piece of land delineated was the garden of Eden. The Bible further indicates that surveyors were active in Israel, defining property boundaries and ownership. Proverbs 22:28 says: "Do not move back a boundary of long ago, which your forefathers have made." The Romans even had a god

named Terminus, who presided over boundaries and whose symbol was a stone.

Roman aqueducts and roads, many of which are still in existence, testify to the amazing accomplishments of the ancient Romans in the field of surveying. With limited means, early surveyors obtained some impressive results. In about 200 B.C.E., the Greek astronomer, mathematician, and geographer Eratosthenes calculated the earth's circumference.

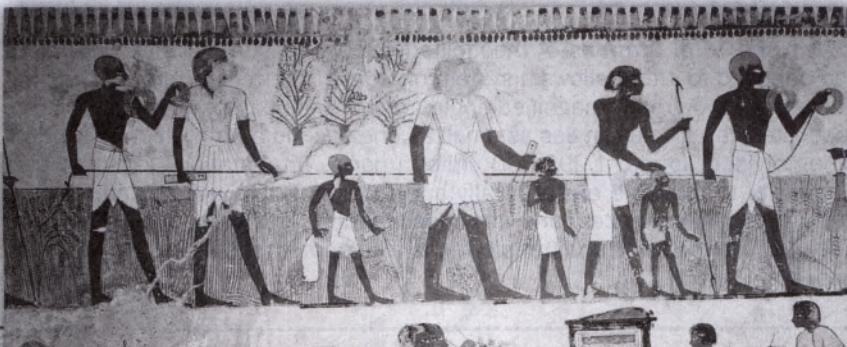
In about 62 C.E., Hero, or Heron, of Alexandria, in his book *Dioptre*, demonstrated the application of the science of geometry, literally meaning "earth measurements," to surveying. And between 140 and 160 C.E., Claudius Ptolemy, following a method set out by Hipparchus, listed some 8,000 places in the known world together with their latitudes and longitudes.

By the 18th century, the Cassini family, over a period of four generations, had successfully conducted the first scientific national survey of France and produced *La Carte de Cassini*. The book *The Shape of the World* explains that "France led the way in scientific cartography; Britain was next; and the Austrian and German states close behind. In the rest of Europe national surveys caught on during the first decades of the nineteenth century."



An old-fashioned level

Borromeo/Art Resource, NY



Egyptian "rope-stretchers" were the forerunners of modern-day surveyors

Beyond Europe, the Great Trigonometrical Survey of India was undertaken in 1817 to complete the mapping of India. It was led by George Everest, after whom the tallest mountain in the world was renamed.

Some of the conditions under which these early surveyors worked were less than ideal. The *Historical Records of the Survey of India* up to 1861 reveal that fever stalked the survey team, and it was said that scarcely 1 in 70 returned to England. Other surveyors were subject to attack by wild animals or lived on starvation diets. Even so, men were attracted by the outdoor work and the measure of independence surveying gave them.

One group of Indians known as the Punjabis gained special note in history for their fascinating work in Nepal and Tibet. Decrees and treaties had forbidden foreigners from entering these countries, so these surveyors disguised themselves as Buddhist lamas, or priests, to gain entry. In preparation for their undercover work, each one had been trained to pace precisely 2,000 steps to the mile. A hundred-bead rosary was used to count their paces and calculate distance.

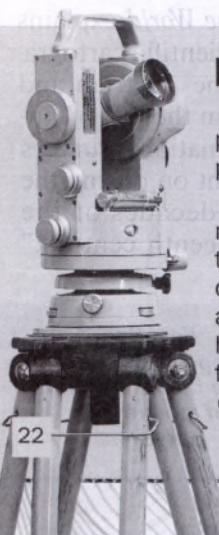
Many individuals, such as former U.S. presidents Washington, Jefferson, and Lincoln, practiced surveying to some degree. Some even credit Lincoln's political success, in part, to his survey work, which had brought him into close contact with his fellow countrymen.

Surveying Today

The types of land surveying usually done in our neighborhoods today fall into three categories. First, there is legal, or cadastral, surveying, which has to do with establishing legal property lines. When land needs to be subdivided for the construction of homes or when the government wants to establish the location of new streets, roads, or highways, land surveyors will be involved in apportioning the land and drawing up the legal plans.

Another type of surveying is called topographic surveying. This involves measuring and locating the size, shape, and slope of a parcel of ground as well as the location of roads, fences, trees, existing buildings, utilities, and so forth. Civil engineers, architects, structural engineers, and other professionals use the accurate location of these features on and around the piece of land that is to be developed. This information enables them to draw their plans accordingly and in some instances to incorporate these features in their designs.

Once designs, approvals, plans, and so forth are ready for a construction project to begin, there is still the matter of exactly where everything should go. At this stage a passerby will often see the third category, construction surveying, being carried out. The surveyors provide all the important points, lines, and elevation markers for the construction workers, in order to assure that all the utilities, roads, and other items are located just where the plans indicate.



Precision Instruments

Electronic Distance Meter—Calculates distance by producing an electronic beam or pulse signal that is reflected back to the instrument by special mirrors positioned at the point to be located.

Theodolites and Total Stations—A theodolite (at left) measures angles and has a microscope attached to it that allows a system of lenses, internal mirrors, and prisms to display internally the greatly magnified angle measurements. Some of the more accurate theodolites can display angles as small as one second of arc, which is equal to a circle being divided up into 1,296,000 uniform parts. Total stations (at right) also have the capacity to measure electronically and to record data accumulated in the field, including angles, distances, and item descriptions. Afterward, the information can be taken back to the office and transferred to a computer for calculation and drafting purposes.

Land surveys done on a small scale requiring measurements of no more than 12 miles are called plane surveys. However, those done on a large scale require a geodetic survey, taking into account the curvature of the earth's surface. Usually it is tied in with a country's national coordinate grid system, which is related to lines of longitude and latitude.* This sort of work is performed to an extremely high degree of accuracy.

Modern surveying has also started to make use of special satellites through arrangements called global positioning systems. With portable devices, surveyors can now quickly locate positions on the earth's surface with great accuracy. Other types of surveying that we may not normally be aware of include photogrammetric, photographs of the terrain taken with special cameras mounted on satellites, and hydrographic, surveys to define shorelines and determine depths and the terrain of rivers, lakes, oceans, and other bodies of water.

Importance to Us

For example, the Golden Gate Bridge in Cal-

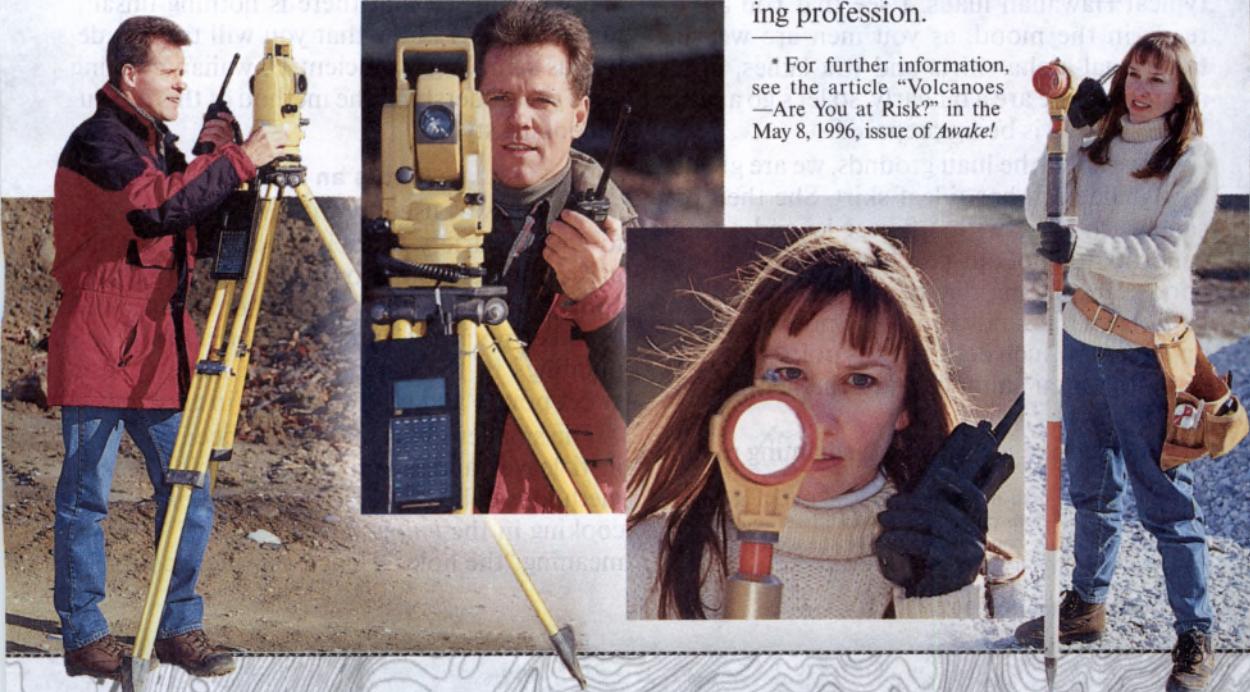
* For further information on longitude and latitude, see the article "Those Useful Imaginary Lines," appearing in the March 8, 1995, issue of *Awake!*

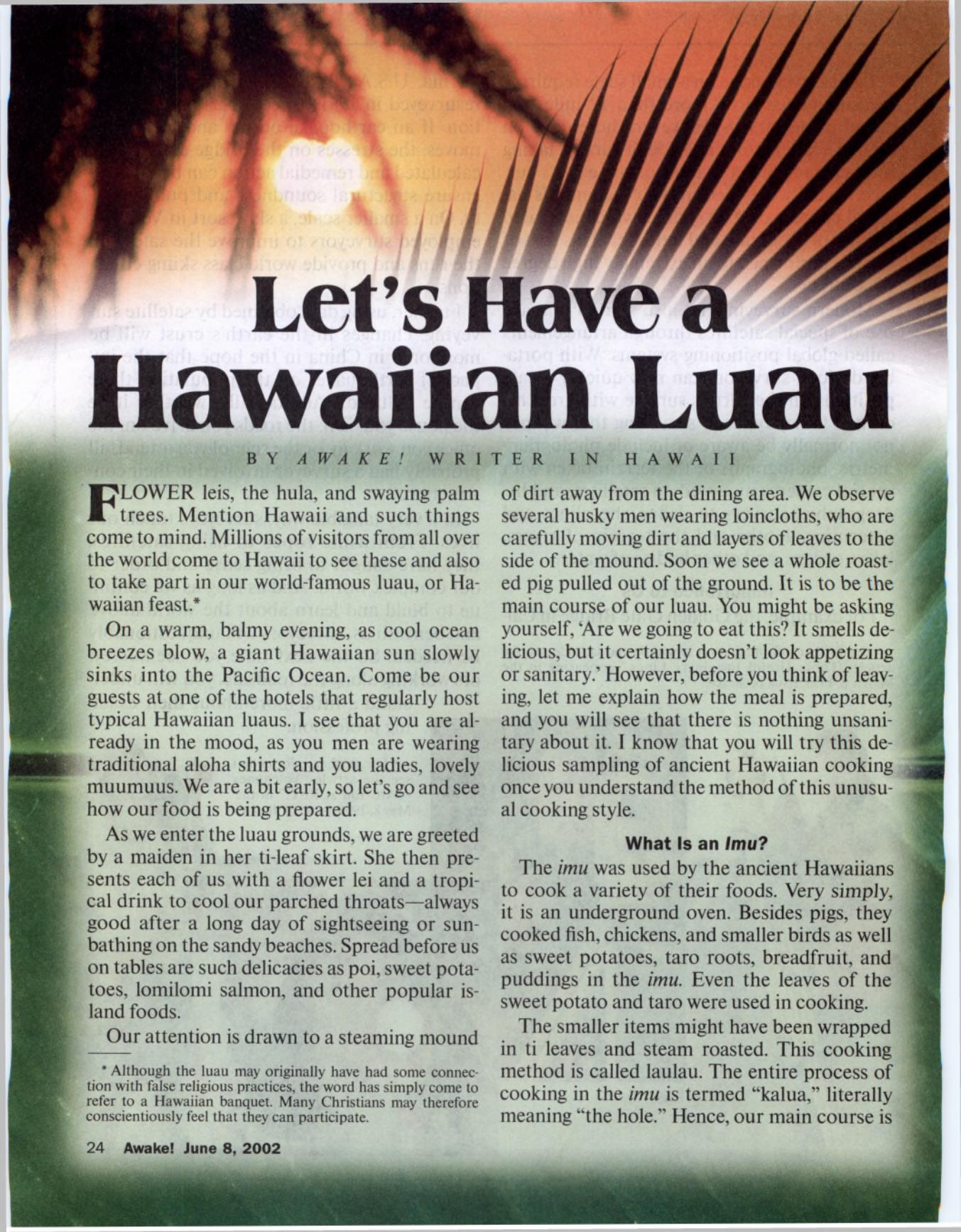
fornia, U.S.A., first opened in 1937. It was resurveyed in 1991 to record its precise location. If an earthquake occurs and the bridge moves, the stresses on the bridge can now be calculated and remedial action can be taken to ensure structural soundness and public safety. On a smaller scale, a ski resort in Vermont employed surveyors to improve the safety on the runs and provide world-class skiing conditions.

Further, using data obtained by satellite surveying, changes in the earth's crust will be monitored in China in the hope that the impact of earthquakes on the population there can be reduced.* Additionally, whether it be the house you own, the roads you drive on, the office you work in, or the school you attend, all probably had a surveyor involved in their construction.

In a very tangible way, surveyors touch our lives. From using ropes to using satellites, they have sought to bring sense and order to our complex world. And as long as we continue to build and learn about the world above and beneath us, surveyors will unquestionably be needed. So the next time you see surveyors working along the roadside, you will understand a little more about their exacting profession.

* For further information, see the article "Volcanoes—Are You at Risk?" in the May 8, 1996, issue of *Awake!*



A vibrant tropical sunset or sunrise over a landscape of palm trees. The sky is filled with warm orange, yellow, and red hues, with long rays of light filtering through the silhouettes of palm fronds in the foreground.

Let's Have a Hawaiian Luau

BY AWAKE! WRITER IN HAWAII

FLOWER leis, the hula, and swaying palm trees. Mention Hawaii and such things come to mind. Millions of visitors from all over the world come to Hawaii to see these and also to take part in our world-famous luau, or Hawaiian feast.*

On a warm, balmy evening, as cool ocean breezes blow, a giant Hawaiian sun slowly sinks into the Pacific Ocean. Come be our guests at one of the hotels that regularly host typical Hawaiian luaus. I see that you are already in the mood, as you men are wearing traditional aloha shirts and you ladies, lovely muumuus. We are a bit early, so let's go and see how our food is being prepared.

As we enter the luau grounds, we are greeted by a maiden in her ti-leaf skirt. She then presents each of us with a flower lei and a tropical drink to cool our parched throats—always good after a long day of sightseeing or sunbathing on the sandy beaches. Spread before us on tables are such delicacies as poi, sweet potatoes, lomilomi salmon, and other popular island foods.

Our attention is drawn to a steaming mound

of dirt away from the dining area. We observe several husky men wearing loincloths, who are carefully moving dirt and layers of leaves to the side of the mound. Soon we see a whole roasted pig pulled out of the ground. It is to be the main course of our luau. You might be asking yourself, 'Are we going to eat this? It smells delicious, but it certainly doesn't look appetizing or sanitary.' However, before you think of leaving, let me explain how the meal is prepared, and you will see that there is nothing unsanitary about it. I know that you will try this delicious sampling of ancient Hawaiian cooking once you understand the method of this unusual cooking style.

What Is an *Imu*?

The *imu* was used by the ancient Hawaiians to cook a variety of their foods. Very simply, it is an underground oven. Besides pigs, they cooked fish, chickens, and smaller birds as well as sweet potatoes, taro roots, breadfruit, and puddings in the *imu*. Even the leaves of the sweet potato and taro were used in cooking.

The smaller items might have been wrapped in ti leaves and steam roasted. This cooking method is called laulau. The entire process of cooking in the *imu* is termed "kalua," literally meaning "the hole." Hence, our main course is

* Although the luau may originally have had some connection with false religious practices, the word has simply come to refer to a Hawaiian banquet. Many Christians may therefore conscientiously feel that they can participate.



▲ Red hibiscus
▼ The hula



Popular island foods include poi, ▲
sweet potatoes, and lomilomi salmon

A traditional welcome
with flower leis ▼



Ron Dahlquist/SuperStock



known as kalua pig. This method of cooking is really a combination of roasting and steaming, as we shall see.

The ancient Hawaiians dug a hole large enough to accommodate all the meal items. Work usually began early in the morning so that the food would be ready for the evening meal. Firewood was laid in the bottom of the hole, similar to the way a large open campfire would be built. Tinder and kindling were laid out, and a pile of wood large enough to burn for three or four hours was carefully added.

The logs were arranged around a stick standing upright. Later the stick was removed, and smoldering ashes were dropped down into the hole to start the fire. Fires were started by rubbing two sticks together. Smooth basalt stones were then placed on top of the wood. Basalt was used because it could be heated without bursting. The stones might range from the size of a fist to that of a bowling ball. Quite a number of stones were needed, as they and the rest of the coals were the source of heat for the entire cooking process. The stones were heated until they were red-hot. Then any unburned wood was removed.

After the stones were brushed free of ashes, some of them were placed into the abdominal and thoracic cavities of the salted pig to ensure

thorough cooking. Smaller cone-shaped stones might be inserted into the cavity of the chickens as well. The rest of the stones and coals were then evenly spread over the bottom and sides of the hole and were covered with layers of grass and ti or banana leaves. The stumps of the banana plant might also be smashed and thrown over the stones. This would prevent the intense heat from burning or scorching the food and would also provide moisture so that the food would be, in effect, roasted and steamed at the same time.

After enough leaves were in place, the pig was lowered onto the leaves, along with the rest of the meal. Everything was again covered with another generous layer of leaves. Tapa cloth made from the bark of the paper mulberry tree or mats made of woven lauhala were next spread over the leaves so that there was no chance of any dirt coming in contact with the food. The entire mound was then covered with a thick layer of dirt, so as not to allow any steam to escape from the *imu*. Water was sometimes sprinkled over the mound to keep it moist. At times, a hollow piece of bamboo was inserted into the mound if the cook deemed it necessary so that more water could be added.

Cooking time depended on various factors, such as the amount and type of food put into the *imu* and the number of stones that were used. It might have taken several hours for the pig to be fully cooked, depending on its

Removing the kalua pig from the "imu"



You Don't Have to Dig a Hole

If you would like to try this Hawaiian treat, you will most likely have to come to Hawaii for an authentic luau. But if you are willing to settle for a reasonable facsimile, you might be able to cook your own kalua pig right in your kitchen.

Even here in Hawaii, we do not all have time to use an *imu* every time we want to eat kalua pig. Therefore, we have made adjustments in order to save some time and effort. Instead of a whole pig, you might settle for a pork butt or roast. For a leaner meat, you might even use chicken or turkey. In any event, rub the whole roast with one tablespoon of liquid smoke per pound of meat. This seasoning will give your meat a smoky smell and taste.

size. When it was decided that enough time had passed, the dirt was carefully removed, followed by the mats and the leaves, to reveal the cooked meal. The food was placed in receptacles, allowed to cool, and then served cold. Uncooked meat was cut out and cooked at another time or in another fashion, such as by broiling or boiling.

Since the ancients had no fireproof utensils, food to be boiled was placed in a wooden bowl with water, and red-hot stones were dropped into it. The uncooked meat might also have been salted, being preserved in this manner for later use. Since cooking was hard, heavy work, the men cooked the meals. For obvious reasons, the *imu* was used over and over again. It was often located under some kind of a shelter, which formed a permanent kitchen for use in bad weather.

The *Imu* Today

Today at our luaus you will notice that things haven't really changed much as far as the use of the *imu* is concerned. A wire mesh might be used to keep the pig together while it is being removed from the pit, as the kalua cooking method causes the meat literally to fall off the bones. Burlap bags have replaced the woven mats or tapa cloths. But other than such minor

If you are able to obtain green ti leaves, wrap the meat in them. Place it in a slow cooker, as this more closely duplicates the moist heat of the *imu*. If you don't have a slow cooker, your regular oven will work just as well. To keep as much of the moisture in as possible, cover your roast with some foil after wrapping it with ti leaves. Use a low oven temperature of 325 degrees Fahrenheit, and cook until well done. The meat should fall away from the bones easily. Shred the meat, and add some of the juices, or drippings, to moisten it. Now your homemade kalua pig is ready for your luau.

After trying this sample of Hawaiian cooking, you may be moved to come here and enjoy the real thing.

innovations, the *imu* has survived intact despite many other changes in the Hawaiian culture.

After all the meat is off the bones, more salt may be added according to taste. Then the kalua pig is ready to eat. Let the luau begin! You may choose to sit here on this mat on the ground and eat off a low table or sit at a more traditional Western table with chairs. In either case, we know you will be glad you stayed for our feast.

Crossword Solutions

V	E	N	G	E	A	N	C	E	I	S	M	I	N	E
E	N	G	E	A	N	C	E	I	S	M	I	N	E	
H	E	N	G	E	A	N	C	E	I	S	M	I	N	E
M	E	N	G	E	A	N	C	E	I	S	M	I	N	E
F	O	R	E	T	S	P	R	O	D	E	J	U	D	A
O	R	E	T	S	P	R	O	D	E	J	U	D	A	H
N	R	E	T	S	P	R	O	D	E	J	U	D	A	T
S	H	I	P	H	I	S	H	A	H	E	B	R	O	N
O	S	H	I	P	H	I	S	H	A	H	E	B	R	O
M	S	H	I	P	H	I	S	H	A	H	E	B	R	O
H	E	N	G	E	A	N	C	E	I	S	M	I	N	E
A	R	E	N	G	E	A	N	C	E	I	S	M	I	N
E	M	E	R	A	L	D	P	U	T	E	O	L	I	
A	A	A	A	A	A	A	A	A	A	A	A	A	A	
D	A	U	G	H	T	E	R	O	F	J	U	D	A	H

Watching the World

Infant Talk

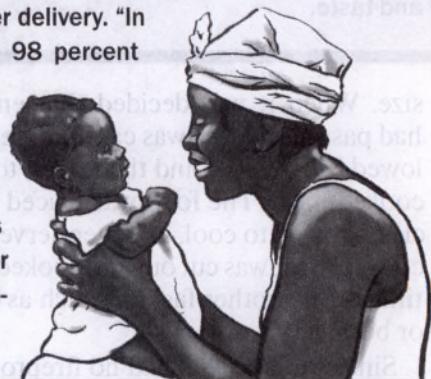
"Just as infants of hearing parents start to babble at an age of about seven months . . . , children who grow up in a deaf household babble silently with their hands in imitation of their parents' main form of communication," even if these children can hear, says *The Times* of London. Research led by Professor Laura Petitot at McGill University, Montreal, Canada, suggests that babies are born with a sensitivity to the rhythms and patterns that are characteristic of all languages, including sign language. She says that babies who can hear but who have "signing deaf parents make a special kind of movement with their hands, with a specific rhythmic pattern, that is distinct from other hand movements. . . . It [is] babbling but with their hands." The babies who were exposed to sign language produced two types of hand movements, while those whose parents used audible speech produced only one type. The research team used a position-tracking system to record the babies' hand movements when they were 6, 10, and 12 months old.

Dead Sea Scrolls Published

"More than half a century after the Dead Sea Scrolls were found in caves in the Judean desert, scholars are celebrating the publication of the last of the 2,000-year-old religious texts," says *U.S. News & World Report*. The publication of the 37-volume series was announced by Professor Emanuel

Saving the Lives of Newborns

Each year, four million babies die within a month of birth. These neonatal deaths "make up more than 40 percent of the deaths of children under the age of five," reports the German magazine *Bild der Wissenschaft*. What can be done to save the lives of newborns? Cost-effective methods recommended in the study "State of the World's Newborns" include such simple things as keeping the babies warm and breast-feeding them immediately after birth, which promotes immunity to illnesses. Deaths can also be prevented by improving the health of expectant mothers, many of whom are overworked and undernourished and haven't fully recovered from an earlier delivery. "In developing countries, where 98 percent of the newborn deaths occur," local people could be trained in midwifery skills. "Their primary tasks would be to give expectant mothers instruction, to care for proper hygiene, and to give vaccinations," the study states.



uel Tov, who led the team of scholars that analyzed the scrolls. The completion of the work was credited to modern technology, including digital photography and multispectral imaging that enabled the scholars to decipher writing that had faded. The writings, translated from Hebrew, Aramaic, Greek, and Latin, are dated from 250 B.C.E. to 70 C.E.

Coping With Uncertainties

Sales of Bibles by members of the Christian Booksellers Association of Canada have increased by as much as 30 percent since the terrorist attacks in the United States, reports Canada's *Globe and Mail* news-

paper. "People are looking to find answers," says Marlene Loghlin, executive director of the association. "There is a fear factor involved here. There are a lot of unanswered questions in people's hearts and minds." The report adds that even smaller bookstores have experienced "a rise in sales of anything religious-based that might help people make sense of the tragic events." According to one University of Toronto theology professor, this is a common reaction. "In times of great uncertainty, people start to ask foundational religious questions," and "seeking answers in the Bible may help," she said.

AIDS—South Africa's Leading Cause of Death

"AIDS has become the leading cause of death in South Africa, and young adults are especially hard hit," says *The New York Times*, commenting on a study by South Africa's Medical Research Council. The researchers estimate that during the next decade, between five and seven million people in South Africa will die from AIDS. Young women in their 20's are dying at a greater rate than women in their 60's. South Africa "has more people known to be infected with H.I.V., the virus that causes AIDS, than any other country," the article adds. "One in nine South Africans, and one in four adults [ages 30-34], is now believed to be living with H.I.V., government officials say."

Living in Cities

"In 1900 the largest cities were London, New York, Paris, Berlin and Chicago," notes *The Sunday Times* of London. But according to new projections, "by 2015 western cities will have been eclipsed. Tokyo, Bombay, Lagos, Dhaka in Bangladesh and Sao Paulo in Brazil will be the biggest." These and 25 other cities will each have more than 20 million inhabitants. However, "estimates show London will lose its place as one of the top 30 most populated cities by 2015, and will be the only leading one whose population will have shrunk," says the *Times*. Explosive growth creates many problems. "The poor will increasingly be concentrated in their own neighbourhoods characterised by high rates of crime, violence and social disorder,"

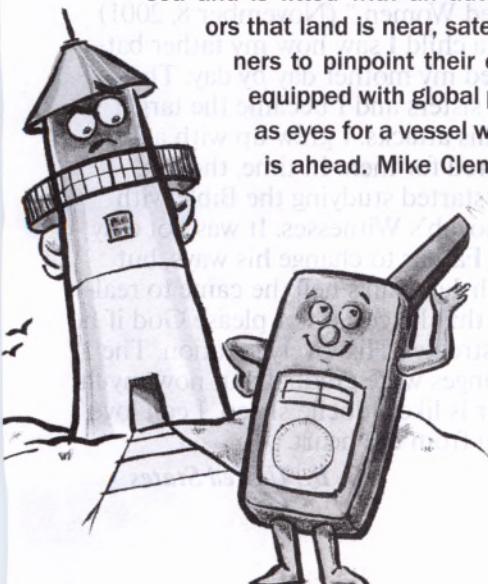
said Douglas Massey, professor of sociology at the University of Pennsylvania, U.S.A. Tokyo, whose 26 million are expected soon to reach 30 million, has been able to cope because its growth has been slower and it has the necessary infrastructure and services. According to Massey, from Roman times to the Victorian era, no more than 5 percent of the world's population lived in cities, but he estimates that by 2015, 53 percent will do so.

Quit Smoking—For Good!

"All smokers must try to stop smoking. If you succeed, then make sure you do not start up again," warns Professor Bo Lundback of the National Institute for Working Life in Stockholm, Sweden. Why? Because ex-smokers who return to smoking may suffer a more rapid decline in lung function than those who do not stop at all. A ten-year study of 1,116 men and women aged 35 to 68 showed that those who smoked throughout the study suffered a 3-percent decline in lung function, while those who stopped for more than a year and then started again experienced a 5-percent decline. "The decline in lung function is much greater in the first couple of years after an ex-smoker restarts," warned Lundback. "And what smokers lose in lung function, they'll never get back." Those who successfully gave up smoking during the ten-year study experienced only a 1-percent decrease in lung function, reports *The Times* of London.

Fading Lighthouses

"Just as the light bulb replaced the candle, the automated lighthouse has replaced the hardy lighthouse-keeper," says the *Financial Post* newspaper. "Now it appears even the days of the automated lighthouse are numbered." While a modern lighthouse beams a powerful light that can be seen from 20 miles out at sea and is fitted with an automated foghorn to warn sailors that land is near, satellite technology enables mariners to pinpoint their exact location. Ships are now equipped with global positioning systems that serve as eyes for a vessel when the crew cannot see what is ahead. Mike Clements, program manager with the Canadian Coast Guard in St. John's, Newfoundland, says that global positioning systems "may make lighthouses redundant. There is nothing that can compare to [these systems]. You can't navigate by a lighthouse."



From Our Readers

From the editor: *The cover series "Life Is Worth Living" (October 22, 2001) elicited wide reader response. This is gratifying, for "Awake!" endeavors to present practical, Bible-based information that will help people of all national, racial, and religious backgrounds to cope with today's problems.*



I am a longtime reader of *Awake!* but nothing has ever moved me like the series "Life Is Worth Living." A year ago I was beaten down by despair, and I wanted to die. These articles reassured me that God understands our weaknesses.

S. H., Japan

I had been feeling despondent because of the attack on the Twin Towers in New York. At times I have had thoughts of suicide but had never faced up to the fact that something was wrong with me. I will get the needed help and follow the suggestions outlined in the article.

M. M., United States

Because of my poor health, I have had thoughts of ending it all. I would talk about it, sometimes jokingly, to see others' reactions. It brought tears to my eyes when I read that God is always there to listen to us and that he cares. This magazine has totally changed my outlook on life.

T.E.J., Canada

I have been dealing with depression for years, and recently I was seriously thinking of ending my life. As I was ready to walk out the door, I remembered that the last article in the *Awake!* series said to talk to someone. So I told my husband. That delay kept me from going through with my plan. This series helped save my life!

M. B., United States

A few weeks before this magazine came out, I found myself looking at a cupful of sleeping pills and facing the dilemma described in the article: "Shall I

swallow them or not?" Your magazine has given me the determination to live that I need. Some illnesses affect the mind to the point of making us reject the desire to live, but it is moving to see that God even takes an interest in people who seem to lose appreciation for the gift of life.

E. S., Italy

I was able to share the information in these articles with my physician. I told him how much they had helped me. Just being reassured that I have value to God motivates me to live. My constant prayer is that you write more articles like these!

J. S., United States

I thought that no one understood me, and it started to occur to me how much easier it would be if I died. But with these articles, I was able to recall the most important thing in life. I won't think any more about dying!

M. M., Japan

Battered Women Thank you for the cover series "Help for Battered Women." (November 8, 2001) As a child I saw how my father battered my mother day by day. Then, my sisters and I became the target of his attacks. I grew up with a deep hatred for men. In time, though, we started studying the Bible with Jehovah's Witnesses. It was not easy for Father to change his ways, but with Jehovah's help he came to realize that he could not please God if he mistreated His lovely creation. The changes were gradual, but now my father is like a docile sheep. I can love him from the heart.

G. B., United States

“Kangaroo Mother Care”

Solution to a Life-Threatening Problem?

The location was a hospital in Bogotá, Colombia, in 1979. Because the survival rate for premature babies was alarmingly low, a Colombian doctor came up with a novel solution—“kangaroo mother care.”

Keeping premature infants alive is a challenge for doctors. Babies with low birth weights are often placed in the warm environment of an incubator, where they remain until they have gained weight. In developing lands, however, overcrowded facilities, poor sanitation, and a shortage of medical personnel and equipment often result in dangerous cross infections.

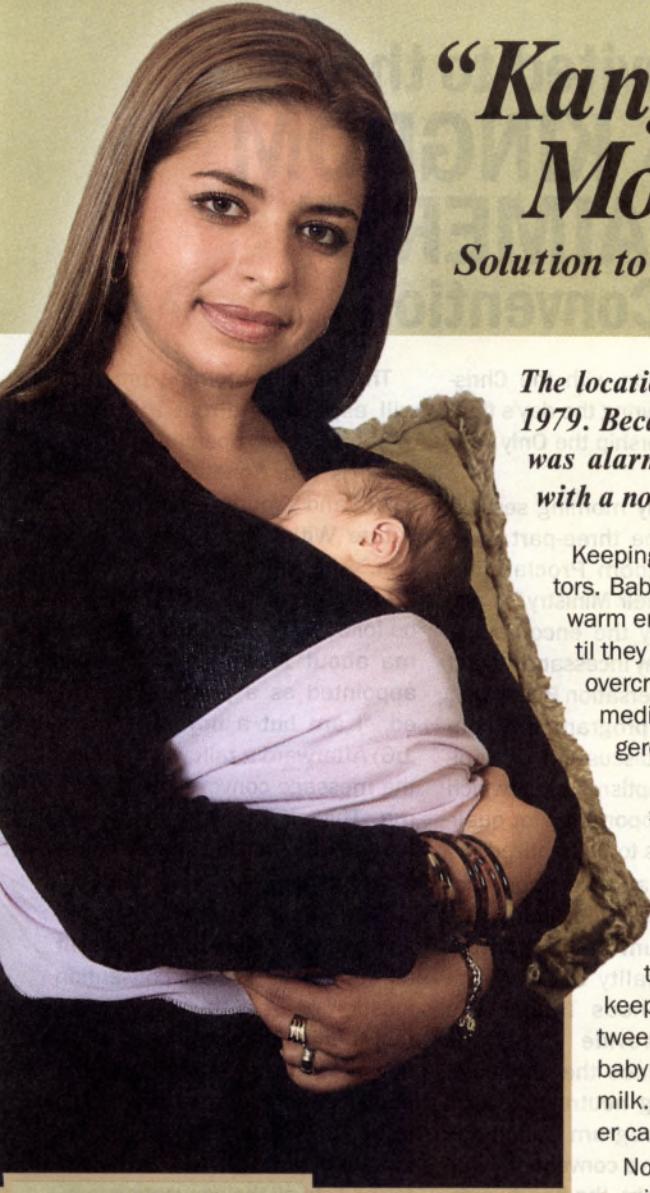
A doctor in Colombia came up with a method that seems to alleviate this problem. How does it work?

When a baby is born prematurely, it is cared for in the standard way until its condition stabilizes. In the meantime, the mother receives training in child care. When the baby is sufficiently healthy, the mother becomes a living incubator. How? By keeping her baby close to her, wrapped vertically between her breasts. Safe in its kangaroo-like pouch, the baby stays warm and can easily be fed its mother's milk. Hence, the method is often called kangaroo mother care.

No fancy equipment is necessary. The mother wears a suitable blouse or a normal dress with a waistband.

When the baby has gained sufficient weight, the mother and baby can go home, returning to the hospital regularly for checkups.

Preliminary research indicates that kangaroo mother care is effective and safe. Furthermore, it seems to promote a closer bond between infant and mother. Not surprisingly, this method has been adapted for use in many countries. In Mexico, relatives are trained to become “kangaroo fathers,” “kangaroo grandmothers,” and even “kangaroo sisters” to help out when mother needs a well-deserved break. Dr. Guadalupe Santos, who manages a kangaroo mother care program in Mexico, told *Awake!*: “We have been using this method since 1992 and have seen how effective it is. Fewer incubators and much less hospital time are needed.”



You Are Invited to the “ZEALOUS KINGDOM PROCLAIMERS” District Convention

IN THE UNITED STATES alone, 194 conventions are scheduled. The first will be held there May 17-19, and the final one in mid-September. One of these three-day gatherings—generally held Friday through Sunday—will likely be in a city near you.

In most places, the sessions will begin with a musical program at 9:30 a.m. On the first day, the welcoming address will be followed by a part that features interviews with Kingdom proclaimers. Then, after the talks “Take Exquisite Delight in Jehovah Himself” and “Show Yourselves Thankful,” the morning session will conclude with the keynote address, “Kingdom Proclaimers Fired With Zeal.”

The Friday afternoon session will include a three-part symposium, “Micah’s Prophecy Strengthens Us to Walk in Jehovah’s Name,” as well as the talks “Maintain Chastity by Safeguarding Your Heart” and “Guard Against Deception.” Finally, excellent help will be provided

in connection with the Christian ministry during the day’s final discourse, “Worship the Only True God.”

The Saturday morning session will include the three-part symposium “Kingdom Proclaimers Who Glorify Their Ministry.” It will be followed by the encouraging talks “Why ‘Pray Incessantly’” and “Spiritual Conversation Builds Up.” The morning program will conclude with a discussion of dedication and baptism, after which there will be opportunity for qualified individuals to be baptized.

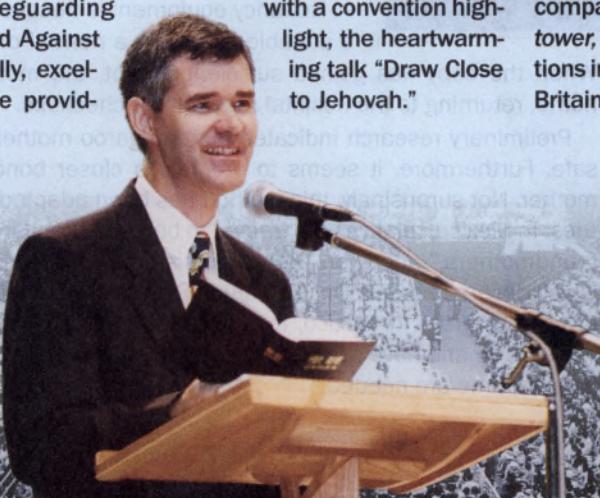
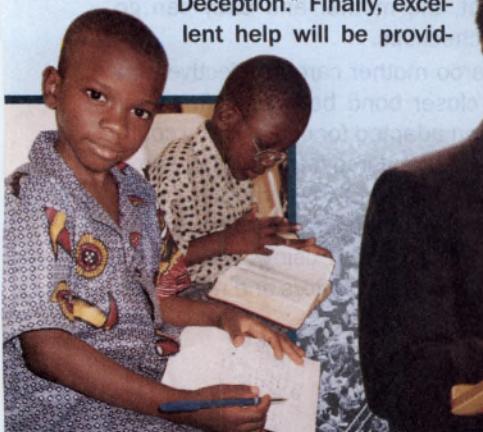
The Saturday afternoon program will feature the final three-part symposium of the convention, “The Quality of Our Faith Tested by Various Trials.” The parts will provide Christians with help to face the challenge of maintaining neutrality. Saturday’s program concludes

with a convention highlight, the heartwarming talk “Draw Close to Jehovah.”

The Sunday morning program will especially direct attention to young ones, opening with the talks “Is Your Confidence in Jehovah?” and “Youths—Build for the Future With Jehovah’s Organization.” The latter part will include 20 minutes of interviews. This will be followed by a full-costume drama about Jeremiah, who when appointed as a prophet protested, “I am but a boy.” (Jeremiah 1:6) Afterward a talk will highlight the message conveyed in the drama. The afternoon program will feature the public address, “The Scene of This World Is Changing.”

Surely your life will be enriched spiritually by your being present all three days. For the convention location nearest your home, contact the local Kingdom Hall of Jehovah’s Witnesses or write to the publishers of this magazine. In its issue of February 15, 2002, our companion magazine, *The Watchtower*, lists all the convention locations in the United States, Canada, Britain, and Ireland.

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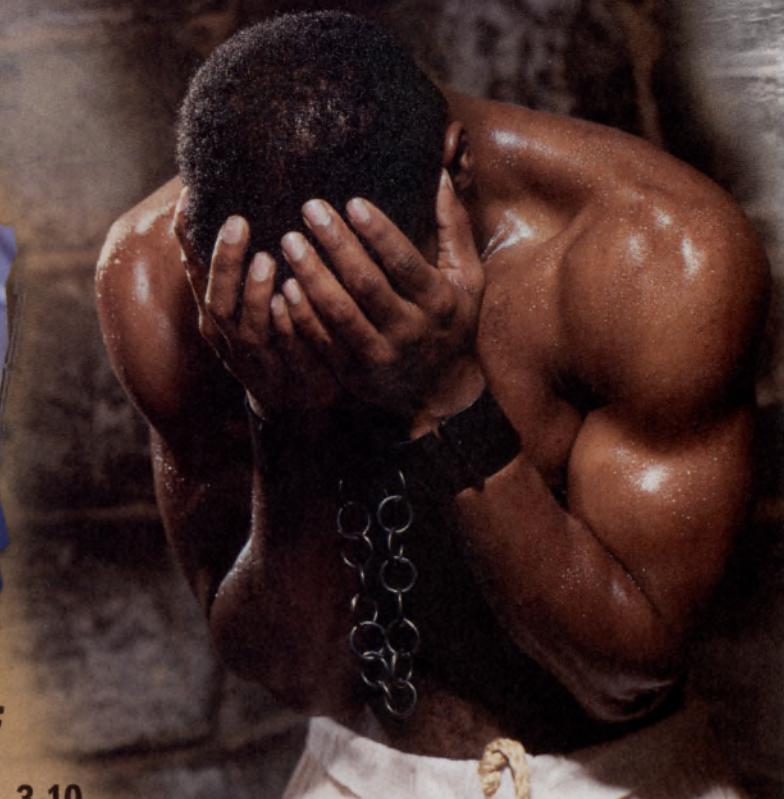
Awake!

JUNE 22, 2002



**WHEN
ALL KINDS
OF SLAVERY
WILL END!**

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When All Kinds of Slavery Will End! 3-10

Slavery comes in many forms, and it has proved to be one of mankind's most persistent plagues. How can we be sure that all slavery will soon end?

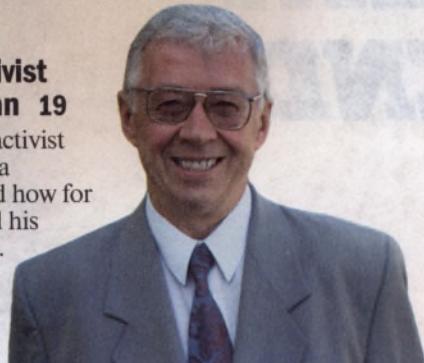


A Tolerant Kingdom in an Intolerant Age 11

Read about the unusual monarchs who promoted religious tolerance in their land at a time when religious intolerance was the norm.

**From Political Activist
to Neutral Christian 19**

Learn how a political activist became a Christian in a Communist prison and how for 15 years he maintained his faith while imprisoned.



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SLAVERY THE PLAGUE PERSISTS

IS SLAVERY dead? Most people would like to think so. The very word conjures up horrific pictures of brutality and oppression. In the minds of many, though, those pictures belong to the past. For example, some envision the slave ships of bygone centuries—creaking wooden vessels with holds crammed full of frightened hordes of humanity, huddling in almost unimaginable squalor.

Granted, such slave ships no longer ply the seas and today's international conventions outlaw that form of slavery. Yet, slavery is by no means dead. The human rights organization Anti-Slavery International calculates that 200 million people still live in some form of slavery. They work in conditions that may well be worse than those endured by slaves of previous centuries. In fact, some analysts conclude that "more people are in slavery today than at any time in history."

The stories of these modern slaves are heartbreakingly tragic. Kanji,* who is only ten years old, herds cattle every day for harsh masters who beat him regularly. "If I am lucky I find a piece of stale bread, otherwise I pass the whole day without food," he explains. "I have never been paid for my labour because I am a slave and their property. . . . Children my age are playing with other children, and I would rather die than lead this awful life."

Like Kanji, modern-day slaves are often children or women. They toil against their will making carpets, building roads, cutting sugarcane, or even working as prostitutes. And they may be sold for as little as \$10. Some children are even sold into slavery by their own parents to cover bad debts.

Impoverished women and children have long been victims of the slave trade



U.S. National Archives photo

* Not his real name.

Do you find such reports revolting? You are not alone. In his book *Disposable People*, author Kevin Bales comments: "Slavery is an obscenity. It is not just stealing someone's labor; it is the theft of an entire life." In view of man's inhumanity to man, what reason have we to believe that the scourge of slavery will ever come to an end? This question has more

to do with you personally than you might at first guess.

As we shall see, there is more than one form of slavery. It comes in widely different forms, some of which affect every person alive. So all of us need to know if true freedom will ever come to mankind. But first, let us consider a brief history of the traffic in human slaves.

THE LONG FIGHT AGAINST SLAVERY

"This is what it means to be a slave: to be abused and bear it, compelled by violence to suffer wrong."—Euripides, a Greek playwright of the fifth century B.C.E.

SLAVERY has a long and often ugly history. From the time of the earliest civilizations in Egypt and Mesopotamia, powerful nations have enslaved their weaker neighbors. Thus one of the saddest tales of human injustice began to be written.

During the second millennium B.C.E., Egypt enslaved a whole nation of possibly several million people. (Exodus 1:13, 14; 12:37) When Greece ruled the Mediterranean, many Greek families had at least one slave—just as a typical family in some lands today might own a car. Greek philosopher Aristotle justified this practice by claiming that humanity is divided into two classes, that of the masters

and that of the slaves, with the former having a natural right to command, whereas the latter were simply born to obey.

The Romans promoted slavery even more than did the Greeks. In the days of the apostle Paul, perhaps half the population of the city of Rome—evidently hundreds of thousands of people—were slaves. And the Roman Empire seems to have had to acquire half a million slaves each year to build monuments, work the mines, till the fields, and staff the huge villas of the wealthy.* Those captured in war were commonly used as slaves, so Rome's insatiable

* One ancient source suggests that some very wealthy Romans may have owned as many as 20,000 slaves.

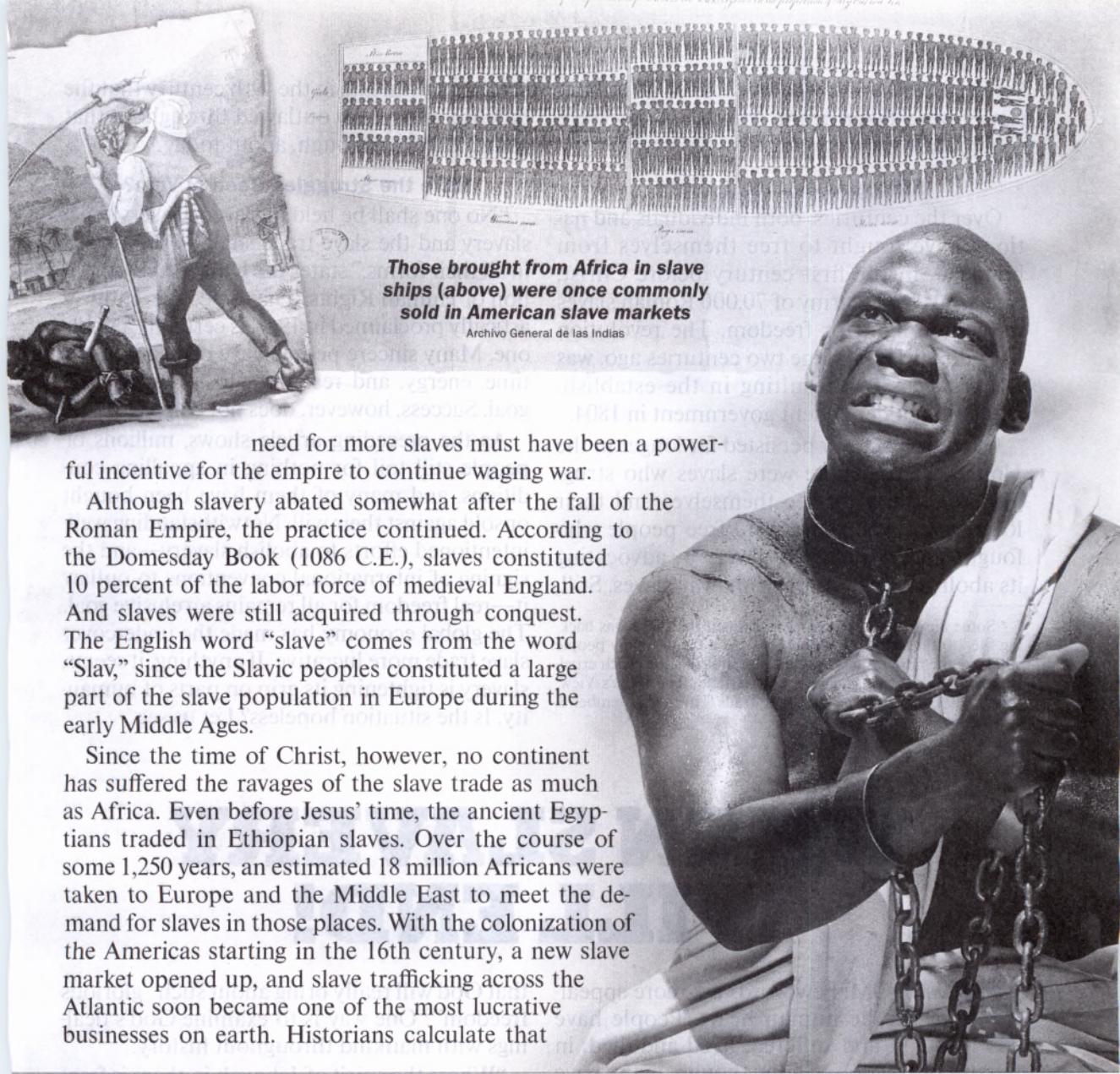
Awake!®

THIS JOURNAL IS PUBLISHED for the enlightenment of the entire family. It shows how to cope with today's problems. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it always stays politically neutral and does not exalt one race above another. Most important, this magazine builds confidence in the Creator's promise of a peaceful and secure new world that is about to replace the present wicked, lawless system of things.

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need for more slaves must have been a powerful incentive for the empire to continue waging war.

Although slavery abated somewhat after the fall of the Roman Empire, the practice continued. According to the Domesday Book (1086 C.E.), slaves constituted 10 percent of the labor force of medieval England. And slaves were still acquired through conquest. The English word "slave" comes from the word "Slav," since the Slavic peoples constituted a large part of the slave population in Europe during the early Middle Ages.

Since the time of Christ, however, no continent has suffered the ravages of the slave trade as much as Africa. Even before Jesus' time, the ancient Egyptians traded in Ethiopian slaves. Over the course of some 1,250 years, an estimated 18 million Africans were taken to Europe and the Middle East to meet the demand for slaves in those places. With the colonization of the Americas starting in the 16th century, a new slave market opened up, and slave trafficking across the Atlantic soon became one of the most lucrative businesses on earth. Historians calculate that

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[#]Audiocassettes also available.

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Would you welcome more information? Write Jehovah's Witnesses at the appropriate address: **America, United States of:** Wallkill, NY 12589. **Australia:** Box 280, Ingleburn, NSW 1890. **Britain:** The Ridgeway, London NW7 1RN. **Canada:** Box 4100, Halton Hills (Georgetown), Ontario L7G 4Y4. **Ghana:** P. O. Box GP 760, Accra. **Jamaica:** P. O. Box 103, Old Harbour, St. Catherine. **New Zealand:** P.O. Box 75-142, Manurewa. **Nigeria:** P.M.B. 1090, Benin City 300001, Edo State. **South Africa:** Private Bag X2067, Krugersdorp, 1740. **Zambia:** Box 33459, Lusaka 10101. **Zimbabwe:** Private Bag WG-5001, Westgate.

between 1650 and 1850, upwards of 12 million slaves were taken from Africa.* Many were sold in slave markets.

Struggles Against Slavery

Over the centuries, both individuals and nations have fought to free themselves from bondage. In the first century before Christ, Spartacus led an army of 70,000 Roman slaves in a futile fight for freedom. The revolution of Haitian slaves, some two centuries ago, was more successful, resulting in the establishment of an independent government in 1804.

Of course, slavery persisted far longer in the United States. There were slaves who struggled rigorously to free themselves and their loved ones. And there were free people who fought sincerely against slavery by advocating its abolition or by aiding runaway slaves. Still,

* Some unscrupulous preachers claimed that God was backing this brutal traffic in human lives. As a result, many people still have the false impression that the Bible justifies such cruelty, which it does not. Please see the article "The Bible's Viewpoint: Did God Condone the Slave Trade?" in the September 8, 2001, issue of *Awake!*

it was not until late in the 19th century that the practice was finally outlawed throughout that country. What, though, about today?

Have the Struggles Been in Vain?

"No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms," states the Universal Declaration of Human Rights. That objective, enthusiastically proclaimed in 1948, is certainly a noble one. Many sincere people have dedicated their time, energy, and resources to achieving that goal. Success, however, does not come easily.

As the preceding article shows, millions of people still toil for nothing in appalling conditions, and many of them have been bought or sold against their will. Notwithstanding well-intentioned efforts to abolish slavery—and the signing of international conventions to outlaw it—real freedom for all remains an elusive goal. The global economy has made the undercover slave trade more lucrative. If anything, it seems, slavery is tightening its grip on parts of humanity. Is the situation hopeless? Let us see.

WHEN SLAVERY WILL END!

FREEDOM! Few words are more appealing to the human heart. People have fought and suffered, lived and died, in pursuit of freedom. Sadly, though, many have done so without seeing much real progress toward their goal. Is there hope for freedom from slavery—a hope that will not end in frustration and disappointment? There is.

The apostle Paul was inspired to write of God's promise: "The creation itself also will be set free from enslavement to corruption and have the glorious freedom of the children of God." (Romans 8:21) But how can we be sure

that God will really bring about such "glorious freedom"? One way is to examine God's dealings with mankind throughout history.

"Where the spirit of Jehovah is, there is freedom," says the Bible. (2 Corinthians 3:17) Yes, God's spirit, or active force, is immensely powerful. He has been using it to provide freedom in many ways for a long time. How so? Well, we must keep in mind that there are many types of slavery. We have already discussed one of the most vicious types, wherein the strong enslave the weak by force and violence. But consider some other forms of slavery.



An estimated six million people are enslaved to gambling in the United States alone

People can enslave themselves to various addictions that prove extremely difficult to escape. And people can be enslaved by lies and deception, fooled into a life of subjugation to false teachings. Most insidious of all, there is a type of slavery that afflicts each one of us—whether we know it or not—and its effects are lethal. However, it must be emphasized that although we are grouping together several forms of bondage in this discussion, we are in no way equating them. They differ widely. Still, there is an important common thread. In the long run, the God of freedom will see to it that the burden of all these forms of slavery will be lifted from mankind.

When Addictions Enslave

Notice how the book *When Luck Runs Out* describes compulsive gambling: “A disorder in which the individual is driven by an overpowering and uncontrollable impulse to gamble. The impulse persists and progresses in intensity and urgency . . . until, ultimately, it invades, undermines and often destroys everything that is meaningful in his life.” Nobody knows how many people have become slaves to gambling. The estimate for just one country, the United States, is about six million.

Alcohol dependence can be equally, if not more, destructive and in most places is more widespread. In one large country, as many as half the adult males suffer from some degree of alcoholism. Ricardo, who became an alcoholic 20 years ago,

explains what this type of addiction means: “From the time you wake up, your body cries out for alcohol—to calm your nerves, to forget your problems, or just to give you sufficient self-confidence to cope with life. You become obsessed with getting a drink, and yet you try to convince yourself and others around you that your behavior is normal.”

Alcohol is not the only addictive substance that enslaves people. Worldwide, there are many millions of people abusing illicit drugs. Furthermore, some 1.1 billion use tobacco—which contains one of the most addictive of all drugs. Many people would love to quit the habit, but they feel enslaved. Has Jehovah proved to be an effective Liberator of people from such powerful forms of bondage?*

Consider the example of Ricardo. “About ten years ago, I realized that alcohol was

* In the first century, gluttony was common at large Roman banquets. Hence, Christians were warned against allowing food or anything else of a similar nature to enslave them.—Romans 6:16; 1 Corinthians 6:12, 13; Titus 2:3.



controlling my life," Ricardo explains. "It was undermining my marriage, my job, and my family, and I knew that I would never solve my problems unless I could escape its grasp. From a study of the Bible, I learned that poverty—both literal and spiritual—plagues the heavy drinker. (Proverbs 23:20, 21) I wanted to have a good relationship with God, and my sincere prayers imploring divine help enabled me to be honest with myself. A man studied the Bible with me and proved to be an invaluable friend. When I had a relapse, he did not give up on me, but he patiently and firmly showed me the course that God outlines for true Christians."

Today Ricardo feels liberated from his former slavery—at least in a relative sense. He readily admits that at first he suffered occasional relapses. "But despite those setbacks," he says, "my desire to serve Jehovah faithfully, along with the support of my wife and other fellow Christians, has helped me to control the situation. I look forward to the time that God has promised when 'no one will say, "I am sick"' and alcoholism will be a thing of the past. Meanwhile, I will keep up my daily battle to present my body as 'a sacrifice living, holy, acceptable to God.'"—Isaiah 33:24; Romans 12:1.

Around the world many thousands of people have experienced firsthand God's help as they worked to free themselves of various addictions. Admittedly, they played a prominent role in their own enslavement, perhaps giving in to various pressures or temptations. Nonetheless, they have found that Jehovah is a very patient Liberator. He is willing to help and strengthen all those who truly want to serve him.

The Truth Will Set You Free

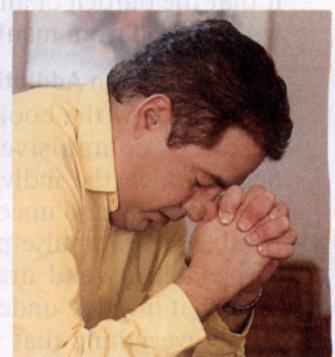
What about enslavement to lies and deception? Jesus Christ assures us that freedom from such is possible. "If you remain in my word," he said, "you are really my disciples, and you will know the truth, and the truth will set you free." (John 8:31, 32) At the time he spoke, many of his listeners were enslaved to a rigid code of Pharisaic tradition. In fact, Jesus said of the religious leaders of his day: "They bind up heavy loads and put them upon the shoulders

of men, but they themselves are not willing to budge them with their finger." (Matthew 23:4) Jesus' teachings freed people from such bondage. He exposed religious lies for what they were, even identifying their source. (John 8:44) And he replaced the lies with the truth, revealing clearly God's reasonable requirements for mankind.—Matthew 11:28-30.

Like Jesus' disciples, thousands of people today are finding that with God's help they can break free from the religious lies and false traditions that have enslaved them. After learning the refreshing truths of the Bible, they find themselves free from oppressive fear of the dead, free from terror of eternal torment in a fiery hell, and free from pressure to pay hard-earned money for religious services performed by clerics who claim to



Like Ricardo, thousands have experienced God's help to break free from addictions



represent Christ—the one who said: "You received free, give free." (Matthew 10:8) Moreover, an even greater freedom is near at hand.

The Most Insidious Slavery

Notice how Jesus described an insidious form of slavery, mentioned earlier, that affects every

man, woman, and child on earth: “Most truly I say to you, Every doer of sin is a slave of sin.” (John 8:34) Who can claim that he does not sin? Even the apostle Paul admitted: “The good that I wish I do not do, but the bad that I do not wish is what I practice.” (Romans 7:19) Although no one can free himself from the fetters of sin, our situation is not hopeless.

Jesus assured his disciples: “If the Son sets you free, then you will be really free.” (John 8:36, *Today's English Version*) The fulfillment of this promise will mean nothing less than freedom from the most damaging of all forms of slavery. To understand how we can escape from it, we must first see how we were enslaved to begin with.

The Bible reveals that God created man as a free moral agent, with no tendency to sin. But a selfish, invisible spirit son of God wanted to wield

power over mankind, regardless of the cost in human suffering. To achieve that goal, this rebellious angel, who was later called Satan the Devil, turned our first human parents, Adam and Eve, away from God. After Adam deliberately disobeyed God’s specific instructions, he not only became a sinner himself but passed imperfection and death on to all his descendants. (Romans 5:12) Eventually, Satan became ‘the ruler of the world,’ and ‘sin has ruled over mankind as king with death.’—John 12:31; Romans 5:21; Revelation 12:9.

How can we be freed? By becoming Jesus’ disciples, we can benefit from Christ’s sacrificial death, which has the power to “bring to nothing the one having the means to cause death, that is, the Devil” and to “emancipate all those who for fear of death were subject to slavery all through their lives.” (Hebrews 2:14, 15) Imagine that—freedom from slavery to sin and death! Isn’t the thought of such freedom appealing?

What, though, about the type of slavery we discussed at the outset? Will there ever be an end to the forcible enslavement of people against their will?

A Sure Basis for Hope

Surely, we can be confident that such a repulsive form of slavery will be eliminated. Why so? Well, consider this: Jehovah God was directly responsible for the greatest march to freedom in all human history. You may be familiar with the historical record.

The nation of Israel was enslaved by Egypt, set to hard manual labor and subjected to brutal treatment. They cried out to God for help, and he, in his great mercy, heard them and acted. Using Moses and Aaron as his spokesmen, Jehovah issued a demand that the Egyptian Pharaoh let the Israelites go free. That proud monarch refused repeatedly, even after Jehovah brought a series of devastating plagues upon the land. Finally, God brought Pharaoh to his knees. The Israelites were free at last!—Exodus 12:29-32.

It is a thrilling account, isn’t it? You may wonder, though, why God has not done something similar in modern times. Why has he not intervened in human affairs and put an end to



slavery? Remember, Jehovah is not ‘the ruler of the world’—Satan is. Because of the challenges raised back in Eden, Jehovah has allowed this wicked Adversary to rule for a limited time. Slavery, oppression, and cruelty are simply hallmarks of Satan’s rulership. Under such influence, human rulership has built up a miserable record. The Bible summarizes that record succinctly: “Man has dominated man to his injury.”—Ecclesiastes 8:9.

But for how long? The Bible explains that we are living in “the last days,” a time when selfishness and greed would be rampant. (2 Timothy 3:1, 2) This means that soon God’s Kingdom, for which Jesus taught us to pray, will establish a righteous society in which slavery will be outlawed. (Matthew 6:9, 10) Jesus Christ, God’s appointed King, will take action to crush every vestige of slavery until the last enemy, death, is brought to nothing.—1 Corinthians 15:25, 26.

When that day finally dawns, faithful mankind will see that the freeing of God’s people from slavery in Egypt was just a small foregleam of this far greater liberation. Yes, in time, “the creation itself also will be set free from enslavement to corruption.” At last, all will be able to enjoy to the full “the glorious freedom of the children of God.”—Romans 8:21.

As Israelites of old were freed from slavery, soon true worshipers of God will enjoy a far greater liberation



A Tolerant Kingdom in an Intolerant Age

"EACH MAY EMBRACE THE RELIGION THAT HE PREFERS WITHOUT ANY COMPELSSION, AND MAY BE FREE TO SUPPORT PREACHERS OF HIS OWN FAITH."

IF YOU had to venture a guess as to when those words were written, what would you say? Many would assume that they form part of some modern-day constitution or bill of rights.

You may be surprised to learn, however, that this declaration was made over 400 years ago—and in a land that was, in a sense, like an island of tolerance in a sea of intolerance. What land was it? First, consider some background to the story.

Intolerance the Norm

Religious intolerance was common throughout the Middle Ages, and it found increased fervor in the 16th century. Religion fanned the flames of ghastly, bloody wars in such lands as England, France, Germany, and the Netherlands. Between 1520 and about 1565, some 3,000 people were executed as heretics in Western Christendom. Almost any questioning of values and ideas—particularly in the area of religion—was likely to meet with an intolerant reaction.

One Catholic Church teaching that had long been shrouded in controversy was the Trinity—the belief that God is made up of three persons. In fact, historian Earl Morse Wilbur explains that it “was the subject of much debate in the Middle Ages among Catholic theolo-

gians, including even Popes themselves.” However, such debate rarely filtered down to the common man, who was expected to accept such doctrines on faith as “divine mysteries.”

Yet, some in the 16th century chose to go against tradition and examine the Scriptures in an attempt to clarify such mysteries. Their motto was *sola Scriptura* (Scripture alone). Those who rejected the Trinity doctrine—some of whom were later called Unitarians, as opposed to Trinitarians—often became the object of intense persecution by Catholics and Protestants alike. They printed their widely read works under pseudonyms and hid themselves away to avoid persecution. Anti-Trinitarians were also at the forefront in the fight for tolerance. Some, such as the Spanish theologian Michael Servetus, even paid for their convictions with their lives.*

United by Tolerance

Rather than fighting religious wars or persecuting dissenters, one country adopted a radically different approach. That country was Transylvania, then an autonomous principality, now a part of Romania in Eastern Europe. Hungarian historian Katalin Péter explains that Transylvania’s Dowager Queen Isabella

* See *Awake!*, November 22, 1988, pages 19-22.



**Georgio
Biandrata**

"sought to stay out of religious conflict by taking on the role of defender of all denominations." Between 1544 and 1574, the Transylvanian Parliament, or Diet, passed 22 laws granting freedom of religion.

For example, following the Diet of Torda in 1557, the queen, jointly with her son, decreed that "each person [may] maintain whatever religious faith he wishes, with old or new rituals, while We at the same time leave it to their judgment to do as they please in the matter of faith, just so long, however, as they bring no harm to bear on anyone at all." This law has been called "the first legislation guaranteeing freedom of religion in any country." Religious tolerance reached its zenith in Transylvania under Isabella's son John II Sigismund, who assumed direct rule in 1559.

Public Debate

Another key figure in the anti-Trinitarian movement in Transylvania was an Italian physician



Pages from the book produced by Biandrata and Dávid, including two of the pictures that shocked Trinitarians



named Georgio Biandrata. His doubts over the Trinity were probably fostered during the time he spent in Italy and Switzerland, where many anti-Trinitarian refugees had found shelter. After removing to Poland, Biandrata did much to promote the Minor Church, later known as the Polish Brethren.* In 1563, he was appointed physician and counselor to Sigismund and moved to Transylvania.

Another educated figure in Transylvania who questioned the Trinity was Francis Dávid, superintendent of the Reformed Church and the court preacher. Regarding the complex teachings related to the Trinity, he wrote: "If these things are necessary for salvation, it is certain that no poor peasant Christian is saved, because he could never understand them in all his life." Together, Dávid and Biandrata pub-

* See *The Watchtower*, January 1, 2000, pages 21-3.

Francis Dávid before the Diet of Torda



Two Trinity line drawings; © Cliché Bibliothèque nationale de France. Paris:

lished a book containing some of the writings of Servetus; they dedicated it to Sigismund.

Controversy over the Trinity began to swell, and with it came demand for a public debate on the subject. In line with the principle *sola Scriptura*, Biandrata held that at such debates only Scriptural, not philosophical, language should be used. Following an inconclusive debate in 1566, Sigismund gave the anti-Trinitarians a printing press to spread their ideas.

Biandrata and Dávid set about their task with vigor, producing the book *De falsa et vera unius Dei Patris, Filii, et Spiritus Sancti cognitione* (The False and True Knowledge of the Unity of God the Father, Son, and Holy Spirit). The book included a historical examination of those who refused to believe the Trinity. One chapter contained pictures that were evidently intended to ridicule the way the Trinity was portrayed in artwork in various churches. Opponents were shocked, saying that the images were scandalous, and they tried to destroy all copies. Discussions multiplied as a result of the controversial publication. In response, Sigismund scheduled a second debate.

Victory for Unity

The debate started at five o'clock in the morning on March 3, 1568. It was held in Lat-

in and lasted ten days. The Trinitarian side was led by Peter Melius, leader of the Transylvanian Reformed Church. He and those arguing in favor of the Trinity used the creeds, the Church Fathers, Orthodox theology, and the Bible. On the other hand, Dávid appealed to the Bible alone. Dávid identified the Father as God, the Son as being subject to the Father, and the spirit as the power of God. Deeply interested in religious matters, Sigismund took part, believing that discussion was the best way to bring out the truth. His presence helped to ensure a free and open, if somewhat heated, discussion.

The debate was considered a victory for the anti-Trinitarians. Dávid was given a hero's welcome in his home town of Kolozsvár (now Cluj-Napoca, Romania). Tradition has it that upon his arrival, he stood on a large boulder on a street corner and spoke of his beliefs so convincingly that he persuaded everyone to accept his teachings.

Conversion and Death

Previous debates had been held in Latin, a language understood only by the educated. Dávid, however, wanted to carry his message to the people. So with Sigismund's approval the next debate was held in the Hungarian language at Nagyvárad (now Oradea, Romania) on October 20, 1569. Again, Sigismund acted as moderator between the two sides.

The Trinitarian Peter Melius declared that in a vision the previous night, the Lord had revealed to him his true nature. The king replied: "Pastor Peter, if last night you were instructed as to who is the Son of God, what, I ask, have you been preaching before? Certainly up to this moment you have been misleading the people!" When Melius verbally attacked Dávid, Sigismund reproved him, reminding the Trinitarian that "faith is the gift of God" and that





our dominions there shall be freedom of conscience.”

Following the debate, Sigismund and most of his court were won over to the Unitarian side. In 1571 a royal edict was issued granting legal recognition to the Unitarian Church. Transylvania was the only State where Unitarians were on equal footing with Catholics, Lutherans, and Calvinists, and Sigismund is known as the only king ever to have accepted the anti-Trinitarian faith. Tragically, shortly thereafter, the 30-year-old king was injured while on a hunting trip with Dávid and Bian德拉塔, and he died a few months later.

His successor, the Catholic Stephen Báthory, reaffirmed the decree protecting recognized religions but indicated that he would tolerate no further changes. At first, Stephen said that he was the ruler of people, not their consciences. But he soon restricted the printing of books, a principal means of sharing faith. Dávid lost his position, and other Unitarians were removed from court and public office.

When Dávid began teaching that Christ should not be worshiped, an order was issued forbidding him from preaching. Despite this ban, Dávid preached twice the following Sunday. He was arrested, charged with religious “innovation,” and sentenced to life imprisonment. He died in the royal dungeon in 1579. Before dying, Dávid wrote on his cell wall: “Neither the sword of popes . . . nor the image of death will halt the march of truth. . . . I am

“CONSCIENCE CANNOT BE FORCED . . . WE DEMAND THAT IN OUR DOMINIONS THERE SHALL BE FREEDOM OF CONSCIENCE.”

—KING JOHN II SIGISMUND

convinced that after my destruction the teachings of the false prophets will collapse.”

Kingly Lessons

King John Sigismund promoted education, music, and the arts. His life, however, was short, and he was often ill. His reign itself was plagued by threats from within—at least nine plots were made against his life—and from without, as foreign powers encouraged rebellions. This tolerant king has often been judged harshly on the basis of his religious views. One opponent later said that the king “doubtless went to hell.”

However, historian Wilbur helps to put things in perspective: “In the year when King John [Sigismund] issued his final charter, guaranteeing full religious liberty to even the most bitterly opposed of all the reformed sects, Protestant theologians were still praising Calvin for having burned Servetus alive, the Inquisition was shedding Protestant blood in the Netherlands, . . . and more than 40 years were still to pass before persons ceased to be burned at the stake in England for holding wrong religious opinions.”

Indeed, as one commentator put it, “by almost any standard—certainly by the standard of his own time—King John Sigismund was a remarkable ruler. . . . He made toleration the hall-mark of his reign.” Realizing that religious peace was in the State’s best interests, he became an ardent defender of freedom of conscience and religious liberty.

In our own day, when religious intolerance still rears its ugly head, we may find food for thought in that tiny kingdom of long ago. During a brief period, Transylvania was indeed a tolerant kingdom in an intolerant age.

Young People Ask . . .

How Can I Get Along With My Roommate?

"I wanted a clean kitchen. But my roommates didn't care if there were dishes out or if they had left stuff out on the stove. It just didn't matter to them."—Lynn.*

ROOMMATES. "They can be the best of friends or the worst of enemies," claims writer Kevin Scoleri. You may not feel that strongly yourself, but it is undeniable that living with someone can be a real challenge.* Roommate clashes are so common among university students that according to *U.S. News & World Report*, many schools are making "extensive efforts" to help roommates get along, including "conflict mediation programs" and seminars.

Sharing an apartment can be difficult even for young Christians who have left home to pursue the full-time evangelizing work. The good news is that by applying Bible principles and by showing "practical wisdom," conflicts can often be resolved.—Proverbs 2:7.

Get to Know Each Other

Once the excitement of moving has worn off, you might find yourself longing for the way things were back home. (Numbers 11:4, 5) Dwelling on the past, however, will only make it harder for you to adjust. Ecclesiastes 7:10 gives this advice: "Do not say: 'Why has it hap-

* Some names have been changed.

* See the article "Why Is My Roommate So Hard to Live With?" appearing in our issue of April 22, 2002.



pened that the former days proved to be better than these?" for it is not due to wisdom that you have asked about this." Yes, it's best to make the most of your situation.

Begin by making efforts to get to know your roommate. True, it is not necessary for roommates to be the closest of friends. In fact, he or she may not be someone to whom you are particularly drawn. Still, if you have to live with that person, doesn't it make sense to have as amicable a relationship as possible?

Philippians 2:4 tells us to keep an eye, "not in personal interest upon just your own matters, but also in personal interest upon those of the others." Without launching into what sounds like an interrogation, could you ask about your roommate's family background, his or her interests, goals, and preferences? Share information about yourself. The more you learn about each other, the more you will begin to understand each other.

From time to time, make definite plans to do things together. Lee says: "Sometimes my roommates and I go out to eat, or we may visit some art galleries together." For Christian roommates, sharing spiritual activities, such as preparing for congregation meetings or

working in the evangelizing work, is an even more effective way to forge bonds of friendship.

David says: "When my roommate gave a public Bible lecture, I visited his congregation to support him." Although he and his roommate have different tastes when it comes to things like sports and music, their love of spiritual things has created a bond. "We have a lot of spiritual conversations," says David. "In fact, we can talk for hours about spiritual things."

A word of caution: Don't get so close to a roommate that you fail to develop other healthy relationships. If your roommate feels that you have to be invited every time he or she goes anywhere, he or she might begin to feel smothered. The Bible's counsel is to "widen out" in your friendships.—2 Corinthians 6:13.

Living by the Golden Rule

Of course, as you get to know each other, you'll also become aware of your differences in habits, tastes, and viewpoints. As young Mark cautions, "you should expect imperfections." Being inflexible or self-centered gen-

**Helping yourself to things
that are not yours can
cause tension**



ates stress and tension. So does expecting your roommate to make major changes to accommodate you.

Fernando has learned this about being a roommate: "You have to be unselfish and not self-centered." His remark is in harmony with the famous Golden Rule, which states: "All things, therefore, that you want men to do to you, you also must likewise do to them." (Matthew 7:12) For example, Fernando soon discovered that he and his roommate clashed over room temperature; he liked it warm, but his roommate preferred to sleep with the temperature low. The solution? Says Fernando: "I got myself a blanket." Yes, as Mark puts it, "be flexible. You don't have to give up *all* your ways, but you may have to give up a way or two."

Here's another area in which you can apply the Golden Rule: Learn to be tolerant of your roommate's tastes. You say that you don't like his music? Well, most likely he feels the same about yours. So if your roommate's tastes in music are not morally degrading, you might try practicing tolerance. Fernando says: "I'd prefer it if my roommate had different tastes in music. But I'm getting used to it." On the other hand, a person can enjoy his music through headphones so as not to disturb his roommate, who may be studying.

Applying the Golden Rule can also prevent needless disputes over material possessions. For example, if you have the habit of helping yourself to whatever is in the refrigerator—but rarely replenish it—resentment can grow. At the same time, getting angry or giving a cold stare when your roommate helps himself or herself to something you have bought won't exactly promote warm relations either. The Bible encourages us "to be liberal, ready to share." (1 Timothy 6:18) If you feel that you are being taken advantage of, don't retreat into silence. State your grievance calmly and kindly.

Be respectful of each other's personal possessions. It is presumptuous to borrow

something without asking permission. (Proverbs 11:2) Be mindful, too, of your roommate's need for privacy. Extend simple courtesies like knocking before entering his or her room. When you show respect, your roommate will likely reciprocate. "It's OK for either of us to study at home," says David. "We both totally respect that and will be quiet for each other. But sometimes I'll go to a library to study in case my roommate wants to do something else."

Applying the Golden Rule would also include being responsible when it comes to such things as paying your share of the rent on time or doing your share of the household chores.

Handling Disputes

Back in Bible times, two well-respected Christian men named Paul and Barnabas had "a sharp burst of anger." (Acts 15:39) What if something similar happens between you two? Perhaps there is a personality clash or some irritating personal habit that pushes your patience to the limit. Does one disagreement or heated discussion necessarily mean that you should stop rooming together? Not necessarily. Paul and Barnabas were evidently able to work out their differences. Perhaps you can do the same before taking a step as drastic as moving out. Here are some Bible principles that can help.

- "Do nothing out of contentiousness or out of egotism, but with lowliness of mind, consider that the others are superior to you."—Philippians 2:3.

- "Let all malicious bitterness and anger and wrath and screaming and abusive speech be taken away from you along with all badness. But become kind to one another, tenderly compassionate, freely forgiving one another just as God also by Christ freely forgave you."—Ephesians 4:31, 32.

- "If, then, you are bringing your gift to the altar and you there remember that your



Show consideration to each other

brother has something against you, leave your gift there in front of the altar, and go away; first make your peace with your brother, and then, when you have come back, offer up your gift."—Matthew 5:23, 24; Ephesians 4:26.

The Benefits

Many young (and not-so-young) Christians with roommates have learned firsthand the truth of the words of wise King Solomon: "Two are better than one." (Ecclesiastes 4:9) Indeed, many have found the experience of rooming with someone to be beneficial. "I've learned how to deal with people better and to adapt," says Mark. Renee adds: "You learn a lot about yourself. And at the same time, roommates can be positive peer pressure." Lynn admits: "I was very spoiled when I moved in with my roommates. But I've learned not to be so rigid. I realize now that just because somebody does things differently from me, it doesn't mean she's wrong."

True, getting along with a roommate takes effort and sacrifice. But if you work hard at applying Bible principles, you can do more than coexist peacefully; you might even find yourself enjoying having a roommate.

TALL BUILDINGS

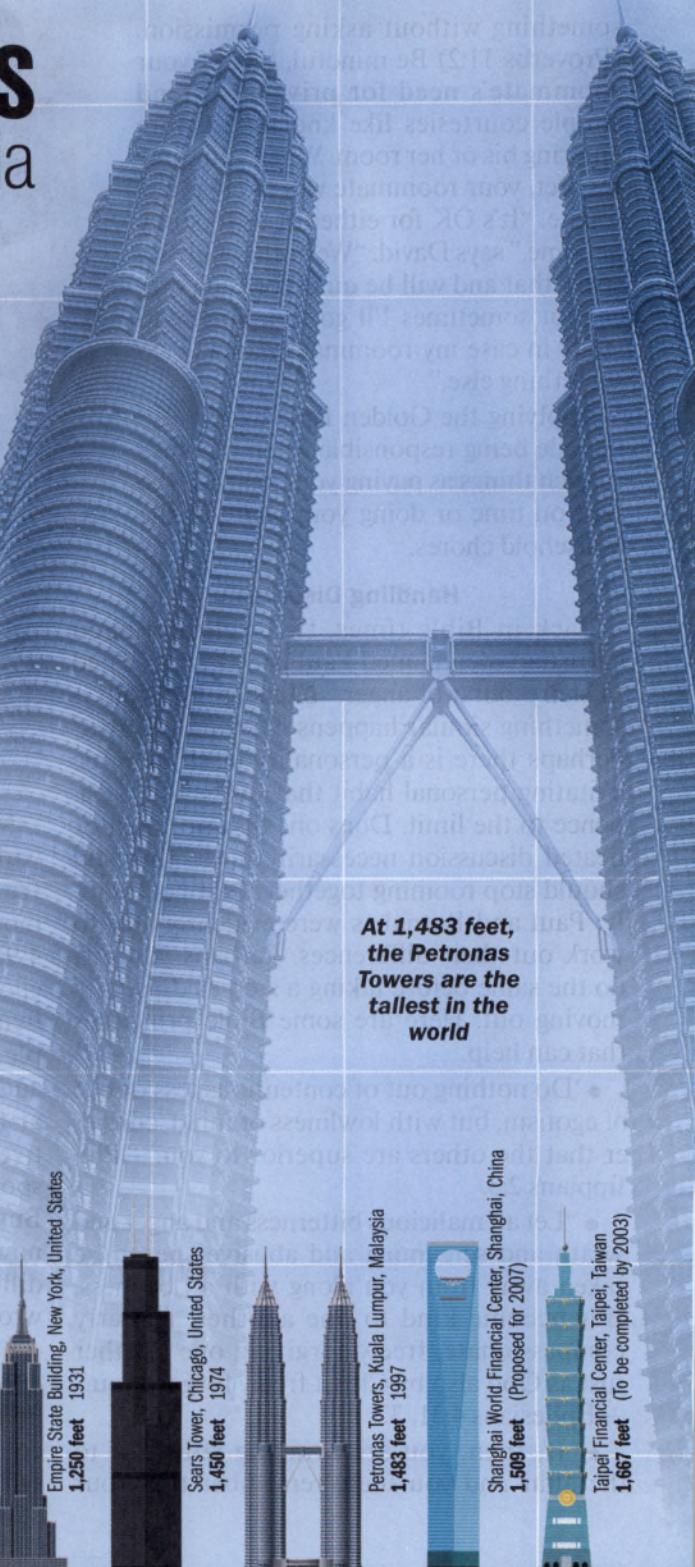
Still Going Up in Asia

"There are six skyscrapers currently planned that will be taller than the once-proud 1,376-foot World Trade Center," notes *The Wall Street Journal*. "All of them are in Asia." The *Journal* adds that there "a 20-year love affair with loftiness continues."

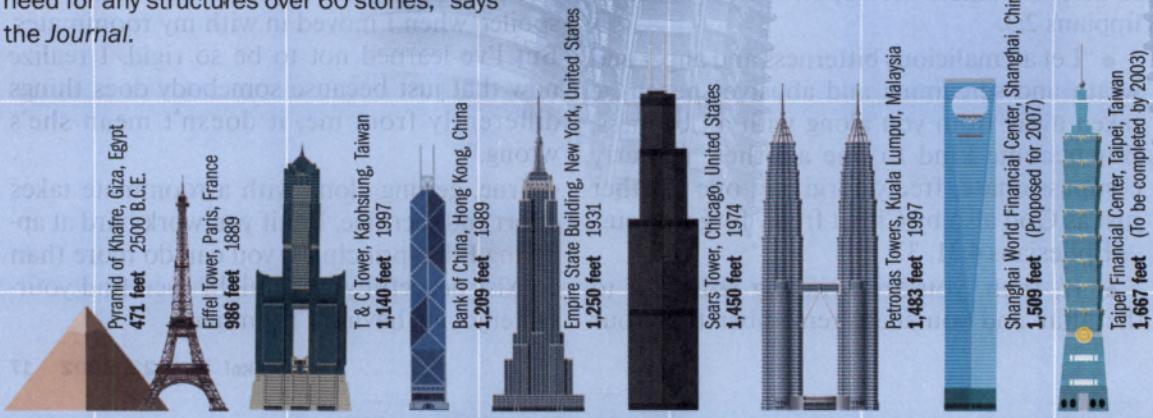
The towering buildings will cap the skylines of cities in China, Korea, and Taiwan. "The desire to reach for the sky runs very deep in our human psyche," says Cesar Pelli, architect of the buildings that are currently the tallest in the world, the twin Petronas Towers in Kuala Lumpur, Malaysia. "Since the Tower of Babel, there is this desire to put a marker up in the sky."

Engineers are adding greater safety measures. These include open-air "refuge floors" every 10 to 12 stories, a stronger core, trusses that connect the core to the main exterior columns or that wrap around the building, and more fire stairways, ones that widen toward the bottom of the building to accommodate more people.

Currently, there are about two dozen habitable buildings in the world that exceed 1,000 feet, and over half of them are in Asia. "Yet experts agree that there's little practical need for any structures over 60 stories," says the *Journal*.



**At 1,483 feet,
the Petronas
Towers are
the tallest in the
world**



Building height includes decorative spires but not antennae.

All sketches: Courtesy SkyscraperPage.com

FROM POLITICAL ACTIVIST TO NEUTRAL CHRISTIAN

AS TOLD BY LADISLAV ŠMEJKAL

After I was sentenced, I was led back to my cell. Immediately, I began tapping a message in Morse code on the wall to a friend two floors above. He was waiting to hear what sentence I had received.

"Fourteen years," I tapped.

He couldn't believe it. So he asked: "Fourteen months?"

"No," I answered. "Fourteen years."

THE year was 1953. The place—Liberec, Czechoslovakia (now Czech Republic).

I was then a 19-year-old activist who sought political change. We activists propagated our views by distributing leaflets that were critical of the Communist Party, then in power. Our activity was judged to be high treason—hence, my long prison sentence.

I had already spent almost a year in custody before my sentence was delivered. Prior to sentencing, prisoners were kept two in a cell, and periodically they were taken blindfolded to be interrogated. We weren't permitted to speak while in our cells, so we whispered or communicated with each other by tapping Morse code.

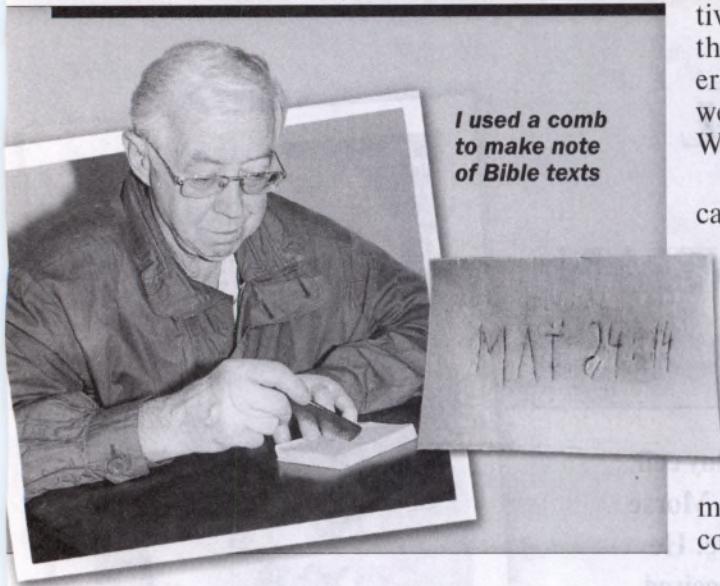
I soon learned that many of those in prison were Jehovah's Witnesses. In our prison it was

the custom to change the inmates in the cells every month or two. Since the Bible interested me, I was happy when I was eventually placed in a cell with a Witness. In time, I started to study the Bible with the Witnesses.

I suppose you could describe our discussions as Bible studies, even though we had no Bible or Bible literature. In fact, I had never in my life actually seen a Bible. But we would talk—the Witness explained from memory Bible subjects—and I took notes on what he said. All of this was done as we sat close to each other whispering.

The only supplies available were toilet paper and a comb. I used the comb to make notations on the toilet paper. Many of the scriptures we discussed I learned by heart. Witnesses who studied with me also taught me Kingdom songs. One Witness told me:





*I used a comb
to make note
of Bible texts*

MAT 24.14

"Now you are in prison as a political criminal, but in the future you could be imprisoned for being one of Jehovah's Witnesses."

Finally, after endless interrogations, I was sentenced and taken to a labor camp near the town of Jáchymov. By then, I was convinced that one day I would become one of Jehovah's Witnesses.

Many Years of Confinement

When I arrived at the camp where uranium was mined, I immediately began looking for the Witnesses. But I soon learned that they had been taken away somewhere else. One Witness, however, remained because he was a cook. He lent me a very worn Bible that had gone through many hiding places. So I was able to read scriptures that I already knew from memory. I kept saying to myself as I read, 'Yes, it is exactly as the brothers taught me.'

About a month later, I was transferred to a camp named Bytiz, near the town of Příbram. There I met other Witnesses. In Bytiz we regularly received Bible literature that was smuggled in. Although the camp administration tried to find out how it reached us, they never did. We had as many as 14 prisoners ac-

tively sharing in witnessing to others. Half of these were baptized Witnesses, and the other half were like me, people who while they were in prison had come to believe as the Witnesses did.

Many of us wanted to symbolize our dedication to God by water baptism. But because of a lack of water—or, to be more exact, the unavailability of a large enough container of water—immersion was not a simple procedure. Therefore, many in those days had to wait until after their release to be baptized. In the Bytiz camp, however, there were large cooling towers for the mine compressors. In the mid-1950's, several of us were baptized in the collecting tank of one of those towers.

A few years later, in March 1960, I was summoned by a police officer who had charge of political prisoners. He said that if I would inform him about the activity of other prisoners, he would arrange for reduction of my prison term. When I refused to do that, he began shouting profanities at me. "You forsook a chance for a good life," he yelled. "I'll see that you never return home! You'll die here." Two months later, however, an amnesty that applied to me was issued, and after a total of eight years of imprisonment, I returned home.

A Brief Period of Freedom

The work of Jehovah's Witnesses had been banned in Czechoslovakia since April 1949, so I soon learned that serving God in so-called freedom was not entirely unlike doing so while in confinement. Now, after my release, I faced another problem. It was then compulsory for every man in the country to serve in the army for two years.

Some men who worked with certain State enterprises were given exemption from military service. Those who worked in coal mines, for example, received such exemption. Since I had done mining, I obtained work in one of the mines. There I received a warm welcome.

"Don't worry about the army," I was told. "It's no problem for us to keep you out of there."

Two months later, when I received a draft notification, those working in administration reassured me: "Don't worry, it must be some mistake. We'll just write the military, and it will be all right." But it was not all right. In time, an official came to me and apologized: "This is the first time it has happened, but you will have to report to the army." When, in keeping with my conscientious objection to war, I refused to join the army, I was arrested and taken to the nearest military unit.

—Isaiah 2:4.

Facing a Tribunal

After I was imprisoned in the town of Kladno in January 1961, attempts were made to convince me to become a soldier. A military officer in charge organized a meeting. I was taken to a conference room that had a large, round table surrounded by deep, leather armchairs. Soon the officers started to arrive and sit around the table. The one in charge introduced them to me one by one. Then he sat down and said: "Now, tell us about this faith of yours."

After a quick, silent prayer, I began speaking to an attentive audience. The conversation soon turned to evolution, and the claim was

made that evolution is a scientific fact. In a labor camp that I had been in earlier, I had studied the booklet *Evolution Versus the New World*.^{*} So to the surprise of those military officers, I was able to provide evidence that evolution was an unproved theory.

Then, a major, who clearly had some background in the Catholic religion, spoke up. "How do you view the Virgin Mary?" he asked. "And what is your attitude toward the holy Mass?" I answered his questions, and then I said: "Sir, I see that you must be a believer, for your questions are different from those of the others."

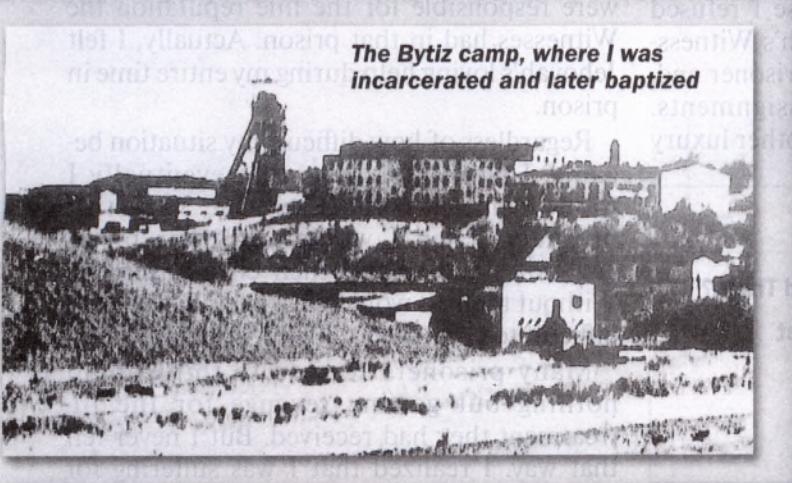
"No! No! No! I'm not a believer!" he protested loudly. In the Communist State, professed Christians received little if any respect or responsibility. So after that exchange, the officer did not participate any further in the discussion. I was very grateful for having the opportunity to explain the beliefs of Jehovah's Witnesses to those men.

Further Opportunities to Witness

A few days later, I was taken to a military facility in Prague and placed under guard. The first armed soldier assigned to guard me was surprised by the special security measures. "This is the first time we have had personally to guard anyone," he told me. So I explained why I had been imprisoned. This interested him so much that he sat down—his rifle between his knees—and listened. After two hours another soldier replaced him, and a similar inquiry and Bible discussion followed.

During the ensuing days, I had the opportunity to speak both with those who guarded me and with other inmates when the guards permitted it. The guards even opened cells

The Bytiz camp, where I was incarcerated and later baptized



* Published by Jehovah's Witnesses in 1950.

and allowed prisoners to gather for Bible discussions! In time, I worried that the freedom the guards granted me to speak with other prisoners would become known and that there would be adverse consequences. But the entire matter was kept secret.

Eventually, when I was taken to court for sentencing, I was given encouragement by those to whom I had spoken about my beliefs. I was sentenced to two years, which were added to the six years from my original sentence that I had not served because of the amnesty. This meant that I had about eight years of imprisonment ahead of me.

Conscious of God's Help

Often, I felt conscious of God's help as I was moved from camp to camp and from prison to prison in Czechoslovakia. When I arrived at the prison in Valdice, the commander asked why I was there. "I refused military service," I replied. "It is contrary to my beliefs to engage in warfare."

"It would be nice if everybody had that attitude," he responded sympathetically. But after thinking about it for a moment, he said: "However, since most people today don't think this way, we must punish you—and punish you severely!"

I was placed in the glass-cutting department, which was a penal department. You see, although I was sentenced because I refused military service as one of Jehovah's Witnesses, I was still labeled a political prisoner and, therefore, was given harsher assignments. Cutting glass for chandeliers and other luxury

glass items was particularly difficult work because such products had to be made without a flaw. Commonly, prisoners handed over their finished work, only to find that the next day half of it was returned for repair. So it was very difficult to fulfill the prescribed production requirement.

The day I entered the glass-cutting department, I first had to wait for the department head. When he arrived, he began yelling at prisoners who, according to his judgment, weren't working hard enough. He passed along and came to me and said: "What about you? Why aren't you working?"

I explained that I was a newly assigned prisoner. He took me to his office and asked the usual questions as to why I had been imprisoned. After I explained my situation to him, he said: "So, then, you are one of Jehovah's Witnesses?"

"Yes," I answered.

His attitude changed. "Don't worry," he said. "We have had many of Jehovah's Witnesses here. We respect them all, for they are hardworking and decent people. I'll see that you get a work quota that you'll be able to fulfill."

The changed behavior of the work overseer totally surprised me. I was grateful to Jehovah and to those unknown fellow believers who were responsible for the fine reputation the Witnesses had in that prison. Actually, I felt Jehovah's loving help during my entire time in prison.

Regardless of how difficult my situation became, I always felt sure that eventually I would come in contact with my Christian brothers. Then I would see their pleasant smiles and receive their encouragement. Without them, it would have been much more difficult to cope with my imprisonment.

Many prisoners seemed to think about nothing but getting revenge for the ill-treatment they had received. But I never felt that way. I realized that I was suffering for

In Our Next Issue

- The Police—Why Do We Need Them?
- Indian Railways—A Giant That Covers a Nation
- Pornography—Is It Just a Harmless Diversion?

obedience to God's righteous principles. So I knew that for each day I spent in prison, Jehovah was able to give me countless wonderful days of life in his Paradise new earth.
—Psalm 37:29; 2 Peter 3:13; Revelation 21:3, 4.

Grateful for Blessings Today

In May 1968, after more than 15 years in confinement, I was finally released. At first, I had inhibitions about speaking with people, which is not uncommon for those who have spent much of their lives around people dressed in prison garb or in the uniforms worn by guards. But my Christian brothers soon helped me get involved in the preaching work, which was, of course, still being carried on under ban.

Within a few weeks after my release, I met Eva. Despite severe family opposition, she, along with her brother, had courageously taken her stand for Bible truth about three years earlier. We soon began sharing in the preaching work together. We also worked in pro-

ducing our Bible literature. This was done in secret underground printeries. Then in November 1969, we were married.

In 1970 our first child, Jana, was born. In time, on weekends I began serving congregations as a traveling minister of Jehovah's Witnesses, visiting them to offer spiritual encouragement. While doing this work in 1975, I was arrested and was again sent to prison. But this time I spent only a few months there. Then in 1977, our son, Štěpán, was born.

Eventually, on September 1, 1993, the Czech Republic granted Jehovah's Witnesses official recognition. The following year our daughter, Jana, married Dalibor Dražan, a Christian elder. Then in 1999, our son, Štěpán, a ministerial servant, married Blanka, who shares in the full-time ministry. All of us are now members of congregations in Prague. We all look forward to the time when the new world will be here—but I especially long for the time when there will be no prison walls anywhere.

Our wedding day



Eva and I, with Štěpán and Blanka on the left and Jana and Dalibor on the right





EXPLORING THE TREASURES OF OAXACA

BY AWAKE! WRITER IN MEXICO

ACCORDING to Mexico's National Institute of Anthropology and History, as many as 4,000 different archaeological sites have been identified throughout the southeastern Mexican state of Oaxaca. From these sites, archaeologists have unearthed priceless relics, many of which are on display in the Museum of Oaxacan Cultures. Join us as we visit this fascinating museum.

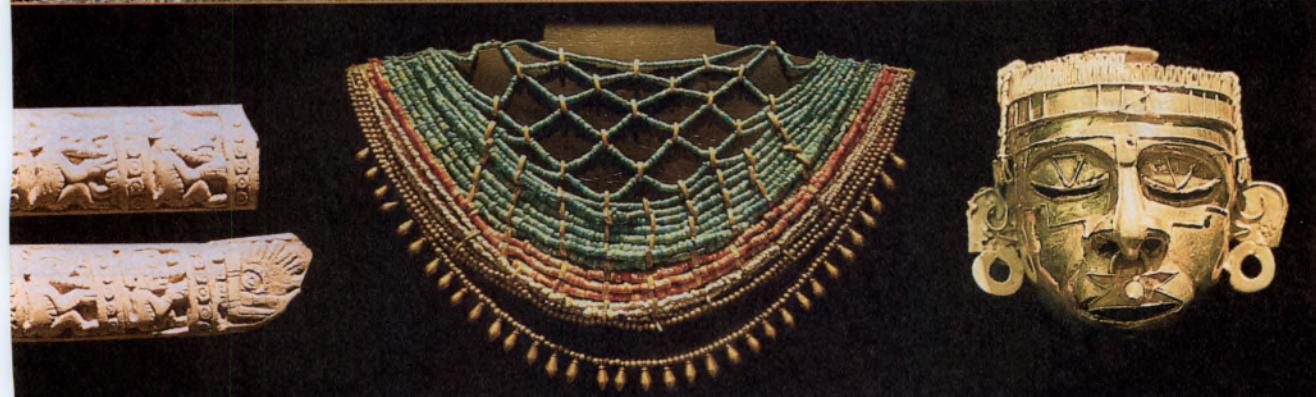
The Museum of Oaxacan Cultures* is situated in the former convent of Santo Domingo de Guzmán, located in the city of Oaxaca, some

270 miles southeast of Mexico City. There, 14 exhibition halls display jewelry, sculptures, ceramics, and other valuable works of art.

Arrowheads are on display in the first exhibition hall. They are about the only remaining evidence of the presence of the nomadic hunting groups that roamed Oaxaca thousands of years ago. Moving on to the second room, we learn about Monte Albán, a hilltop city in the central Oaxacan valley. It has been termed "the first major city in the Americas." Monte Albán apparently flourished between

* Previously known as the Regional Museum.

All pictures: Reproducción Autorizada por
el Instituto Nacional de Antropología e Historia
CONACULTA-INAH-MEX



300 and 900 C.E. However, its initial construction may date back to the eighth century B.C.E.

The well-preserved ruins of Monte Albán reveal that its people had acquired extensive knowledge of astronomy, goldsmithery, and hieroglyphic writing. Its archaeological treasures can still be seen. For example, there are a number of pyramids that stand out starkly from the surrounding valley. In addition, great plazas, underground passageways, a court for playing a ritual ball game called *ollama*, and some 170 subterranean tombs have been identified.

On January 9, 1932, archaeologist Dr. Alfonso Caso discovered Tomb 7, a Zapotec tomb that held the remains of a nobleman, along with a huge cache of treasures. Among the items found in this tomb were pieces of jewelry crafted with gold, silver, and copper as well as jade, turquoise, rock crystal, pearls, and coral. Many of these items, including objects of gold having a combined weight of nearly eight pounds, are on display.

Besides glittering jewelry and gems, Tomb 7 contained beautiful clay artifacts and sculptured bone. One notable item was a lovely multicolored jar adorned with drawings. At the fall of Monte Albán, the period of writing in relief on monuments ended, giving way to Mixtec writing, especially on codices, or leaf books.

By 900 C.E., all the great Mesoamerican cities, including Monte Albán, had been abandoned. For the next 600 years, warriors and military factions ruled. Of all the groups inhabiting Oaxaca during that period, the Mixtec left perhaps the greatest legacy. Says *The Encyclopedia Americana*: "The Mixtecs were master craftsmen and artists, excelling in jewelry and exquisite picture books."

Eventually, we hope to return and review information regarding Mexico's struggle for independence from Spain. In the meantime, come and explore the treasures of ancient Mexico for yourself. You will be glad that you did!

**Monte Albán flourished
between 300 and 900 C.E.**

**Bottom: Breastpiece and other items from
Tomb 7 and jars of the same period**





A Unique Herd of **WILD WHITE CATTLE**

BY AWAKE! WRITER IN BRITAIN

CHILLINGHAM PARK, in the county of Northumberland, on England's border with Scotland, is home to a small herd of Wild White cattle. Every year visitors come from far and wide to see them. Why? Because these animals are unique. My wife and I are among the visitors today.

These Wild White cattle are thought to have been at Chillingham since at least the 13th century, when



Wild Instincts

a park wall, enclosing some 1,500 acres, was built to corral wild cattle for food. These unusual animals, now restricted to 350 acres of the park, all have red ears, black feet, and speckled faces. The speckles appear when they reach about two years of age and gradually spread over the neck and shoulders.

The herd has never been known to produce a colored, or even partially colored, offspring. They are allegedly uncrossed with any domestic stock and are unlike the thousand or so other cattle of Chillingham Park, which can now be found in small herds across Britain and North America. Tests have shown that the blood grouping of this herd is unique among Western European cattle.

The two horns of the bulls grow forward and outward, whereas the horns of the females are raked backward. The shape of the skull and the manner in which the horns grow are similar to the aurochs, the extinct wild ox depicted in ancient European cave paintings. Some authorities believe that the cattle at Chillingham are the direct descendants of the oxen that once roamed the British Isles, but their origin remains obscure.

Herd Hierarchy

To get a closer view of these animals, we join the warden of the herd in his four-wheel-drive vehicle. We drive rapidly downhill over rough pastureland, and suddenly the herd comes into view, sheltered from the sun under a small clump of trees. Some look at us curiously, as cattle do. Two or three of them amble over to our vehicle and rub up against it with their massive horns.

The warden points out the leader of the herd, king bull, as he is known. He is the fittest and strongest bull. During the time of his "reign," which lasts about three years, he will sire all calves that are born to the cows. In this way, it seems, only the best available blood is carried forward year by year. No bull is allowed to mate with his own offspring, and no son takes over as sire from his father.

At one time the wolf was the principal enemy of these animals, preying mainly on weaker members of the herd, although there have been no wolves in Britain since the 16th century. The cattle do sometimes stampede if frightened, and when they eventually come to a halt, the bulls instinctively form a protective circle, with the cows and their young in the middle, safe from any possible predator.

These cattle are truly wild, so modern agricultural practices are of little help in caring for them. Even in winter when there is little grass, they will eat only hay and straw, refusing grain and cattle feed. The calves have a very low birth weight, so there are few problems during calving; but should a cow get into difficulties, nothing can be done to assist her, as vets cannot be called. If one of the animals is touched by a human, it is said that it could be killed by the rest of the herd.

Cows give birth to their calves away from the herd and keep them hidden for the first week or so. After that, the mother and calf approach the herd, and the king bull comes to meet them and to escort them in. Next, the other cows sniff and inspect the calf before it is admitted. Once it is accepted, no further special attention is paid to it.

A major outbreak of foot-and-mouth disease came within two miles of Chillingham Park in 1967. The estate was hurriedly sealed off, and the herd saved. Afterward, it was decided that a small reserve herd should be set up in Scotland, as a precaution against extinction. There was no problem with rejection in this case, as all the animals selected to start this new herd were handled together.

We have appreciated our short excursion to see the Wild White cattle and to learn something of their history. Perhaps one day you will be able to visit in person and see for yourself these unique beasts in their tranquil setting.

Watching the World

The French and the Paranormal

In spite of their reputation as rationalists, many French people still believe in the paranormal. According to a report in the French daily *Le Monde*, researchers found that "a third of the population believe that characteristics are determined by astrological signs, while a quarter put faith in horoscope predictions." About 50 percent believe in faith healing and telepathy. Surprisingly, research revealed that an interest in science did not dispel belief in the paranormal. On the contrary, those with very little scientific knowledge tended to be less credulous than those who had a very good understanding of science.

Killer Heatstroke

Commenting on the heatstroke death of U.S. sports star Korey Stringer, *Time* magazine explained that in hot, humid weather, perspiration may not evaporate rapidly enough to cool the body during heavy exertion. Heatstroke, characterized by a potentially deadly rise in body temperature, may result. Warning signs of heatstroke may include dizziness, headache, nausea, weakness, mental confusion, rapid pulse, and hot, dry, flushed skin. Immediate cooling of the body with ice water, ice packs, or other means is necessary to save the victim's life. But prevention is better than a cure. "Try to avoid exercising in the hottest part of the day. Wear loose-fitting clothing that allows air to circulate around your body. And be sure to drink plenty of liquids," especially water, recommends *Time*. "Alcohol, tea and colas, which

Rats and Humans in a Race for Food

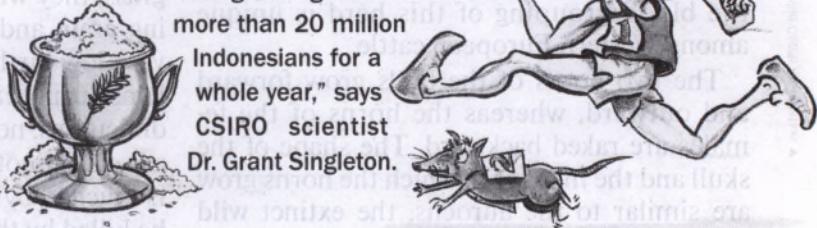
According to the Australian Commonwealth Scientific and Industrial Research Organization (CSIRO), worldwide there are ten baby rats born for every human baby born. Each day, some 360,000 new human mouths must be fed, but 3,600,000 newborn rats also demand food. For example, Indonesia has a population of about 230 million people, and some 60 percent of them rely on rice for their daily energy requirements. Yet, in that country, rats eat about 15 percent of the rice crop each year. "That means that the rats

are eating enough rice to feed

more than 20 million

Indonesians for a whole year," says

CSIRO scientist Dr. Grant Singleton.



act as diuretics, can actually increase fluid loss."

Tobacco Companies' Questionable Practice

Secret tobacco company documents reveal that tobacco companies have "deliberately misled smokers into thinking they are smoking cigarettes that contain lower levels of tar and nicotine than they really do," reports Britain's *New Scientist* magazine. To cite one example, a 1990 European Union directive imposed a limit of 15 milligrams of tar per cigarette as well as a nicotine limit. However, to meet those limits on tar and nicotine, one company's documents reveal that instead of altering the cigarettes, the firm deliberately manipulated the standards by changing how they measure the substances. How were they able to get away with it? "The companies were able to do this be-

cause they effectively control the tobacco committee [that] sets such tests," reports *New Scientist*. States Stella Bialous of the World Health Organization: "It illustrates how useless these regulations are for protecting the public."

Oldest Printed Ad

Chinese archaeologists have found the world's oldest known printed paper advertisements, reports China's People's Daily Online. Two pieces of wrapping paper, dating back about 700 years and evidently used to package oil paint pigment, were unearthed from a tomb in China's Hunan Province. "There are 70 Chinese characters on the top right of the paper which describe the variety, quality and characteristics of the commodity, and the address of the store is also printed on the paper,"

says the report. Some of the language of the ad is strikingly similar to modern ads. It reads, in part: "Compared with other oil paints, the tint of our product is unique." Noting that paper came to Europe in the 12th century and Gutenberg invented typography only in the 15th century, the report observes: "In China, paper-making can be traced back to AD 105, when Ts'ai Lun first created a sheet of paper; as to printing, in [the] 9th century China already had wood block printing."

Church Commerce

Facing flat attendance and falling donations, churches across the United States are opening secular businesses to help pay the bills. "It's the future of every aggressive church," says Stephen Munsey, senior pastor of the Family Christian Center in Munster, Indiana. According to *The Wall Street Journal*, churches' commercial activities range from selling coffee and dough-

nuts in the church lobby to operating full-service restaurants on the church terrace. One church in Jacksonville, Florida, opened a shopping mall near its church sanctuary. The mall includes a travel agency, a beauty salon, and a soul-food restaurant. The church's founder and bishop, Vaughn McLaughlin, says: "Jesus wanted us to take the gifts that he gives us, and get interest." He adds that in 2000, the church's businesses brought in over two million dollars in revenue.

Harmless Cannabis?

"Claims that cannabis is harmless have been undermined by a new report which warns that the drug is becoming more powerful and can lead to severe long-term health damage," reports *The Independent* of London. Professor Heather Ashton of Newcastle University, England, says: "Cannabis affects almost every body system. It combines many of the properties

of alcohol, tranquillisers, opiates and hallucinogens." It is known to seriously impair driving skills. It can also provoke acute mental illness, including schizophrenia; does five times more damage to the lungs than do cigarettes; may cause rare throat cancers; and may bring on fatal heart attacks in some young users. In the 1960's, one marijuana cigarette typically contained 10 milligrams of THC, a chemical affecting the brain. "Now, with more sophisticated cultivation and plant breeding, a joint may contain 150mg of THC and up to 300mg if it is laced with hashish oil," explains the newspaper.

Do You Understand Your Doctor?

"Communication between doctors and patients is in trouble," reports Brazil's *Folha de S. Paulo*. In a survey made at the emergency pediatric ward of one São Paulo hospital, 25 percent of parents accompanying children left the doctor's office without understanding what had happened there, 24 percent could not read the prescription because of poor handwriting, and 90 percent could not remember the doctor's name. Several factors are contributing to this communication breakdown. They include "quick and impersonal" consultations that leave patients "distrustful and dissatisfied with the doctor's diagnosis," excessive use of medical jargon, and the fact that modern medical tests make it unnecessary for doctors to ask as many questions as they used to. According to the report, one psychiatrist cites another factor—the "emotional shield" that many doctors develop "to protect themselves against pain, suffering, anguish, and fear of death."

Chicken Soup—A Natural Cold Remedy

Chicken soup has long been used as a folk remedy for respiratory ailments such as colds. As reported in the book *Food—Your Miracle Medicine*, Dr. Irwin Ziment, lung specialist at the University of California at Los Angeles, explains how it works: "Chicken, like most protein foods, contains a natural amino acid called cysteine, which is released when you make the soup. Cysteine bears a remarkable chemical similarity to a drug called acetylcysteine, which doctors prescribe for their patients with bronchitis and respiratory infections." This drug, originally derived from chicken feathers and skin, is a mucolytic, that is, it thins down and promotes the flow of mucus from the nose, throat, and lungs. Chicken soup acts in much the same way. To make the soup an even more effective congestion fighter, Dr. Ziment suggests adding garlic, onions, and hot spices like chili peppers.



From Our Readers

Battered Women I have no words to express my gratitude for the series "Help for Battered Women." (November 8, 2001) I am a victim of domestic violence, and even when I managed to report what was

happening to me, I was still convinced that no one could understand the pain, the anguish, and the deep sadness that I was unable to soothe in any way. These articles describe my sentiments exactly.

N. L., Italy



magazine back up, feeling that it was about a part of my past that I wanted to pretend never happened. I prayed for strength to pick up the magazine again. How grateful I am that I did! This series helped me to realize that I am not alone in my suffering. Just reading the words "beating one's mate is a gross sin in God's eyes" was like pouring soothing oil on a wound. Thanks for such comforting articles that deal with real-life situations.

D.G.M., United States

I have had the same experience as the women mentioned in the articles. I would tell myself that alcohol and the environment my husband was brought up in were the causes. Even though those factors can explain things, I was comforted when I understood that there is no excuse for violence. With all my heart, I want my husband to read the Bible and come to know Jehovah's love.

S. I., Japan

This series had a special effect on me, since I am a battered wife. I felt as if I were Roxana. It helped a lot to learn that there are other people who know how a battered wife feels. I learned from these articles that I am not the one to blame for my husband's attitude. They also helped me to realize that I am important to God, even if my husband regards me as unworthy

and useless. Thank you for publishing such helpful material. It is far better than wealth!

B. L., Philippines

You've managed to put in writing all the pain and frustration that I've been unable to express. This series helped me to see that Jehovah understands the mental and emotional distress that this problem causes. Please keep on writing articles like these, because this problem needs to be talked about and understood by others. I'm sure many will gain the same comfort that I did from these articles.

K. E., Australia

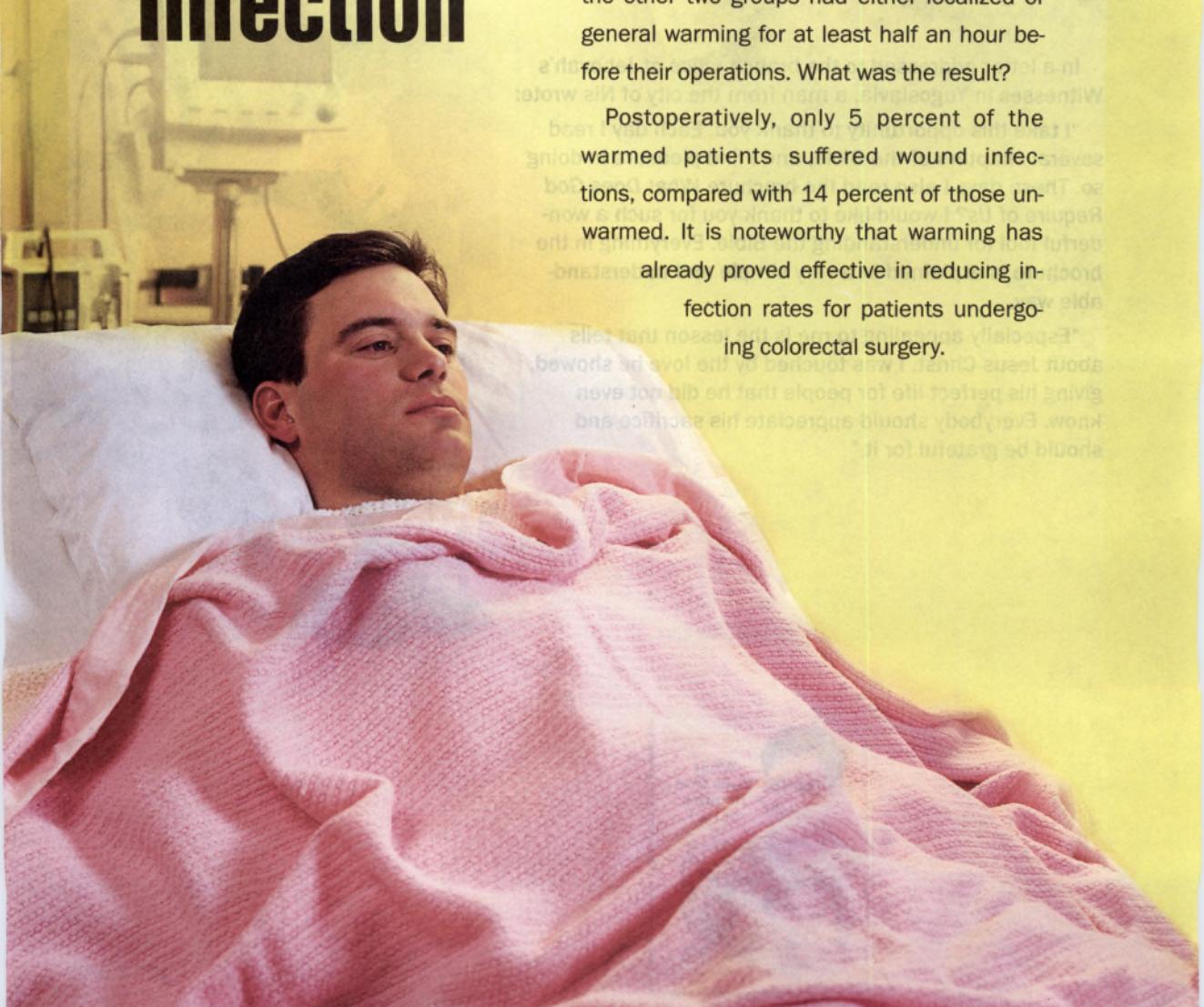
I was raised by a quick-tempered father, and I often get angry at my husband. Sometimes—no, many times—I actually hit him. My husband is stronger than I am, so I thought that I wasn't really hurting him. When I read what the article stated—that beating one's mate is a gross sin in God's eyes—I was shocked. My husband is a meek servant of Jehovah. I want with all my heart to apologize to him. I am thankful to Jehovah for this discipline.

T. I., Japan

This magazine brought tears to my eyes. It was like reading my own personal experience. But recently my husband has been asking questions about the Bible. He has gone to some of the meetings at the Kingdom Hall, and he is now studying the Bible. I can relate to Lourdes' comment that appeared on page 11: "Sometimes I think I am dreaming!"

E. R., United States

Warming Reduces Risk of Infection



THE RISK OF WOUND INFECTION AFTER SURGERY

is an ever-present problem. However, "warming patients before routine operations can cut the risk of infection by more than 60 per cent," reports *The Times of London*.

Researchers at the University Hospital of North Tees, England, divided over 400 patients who were about to have breast, varicose-vein, or hernia surgery into three groups. One group received no warming, and the other two groups had either localized or general warming for at least half an hour before their operations. What was the result?

Postoperatively, only 5 percent of the warmed patients suffered wound infections, compared with 14 percent of those unwarmed. It is noteworthy that warming has already proved effective in reducing infection rates for patients undergoing colorectal surgery.

"Touched by the Love He Showed"

In a letter addressed to the branch office of Jehovah's Witnesses in Yugoslavia, a man from the city of Nis wrote:

"I take this opportunity to thank you. Each day I read several chapters of the Bible, and I find pleasure in doing so. These days I also read the brochure *What Does God Require of Us?* I would like to thank you for such a wonderful tool for understanding the Bible. Everything in the brochure is explained in a very simple and understandable way."

"Especially appealing to me is the lesson that tells about Jesus Christ. I was touched by the love he showed, giving his perfect life for people that he did not even know. Everybody should appreciate his sacrifice and should be grateful for it."

