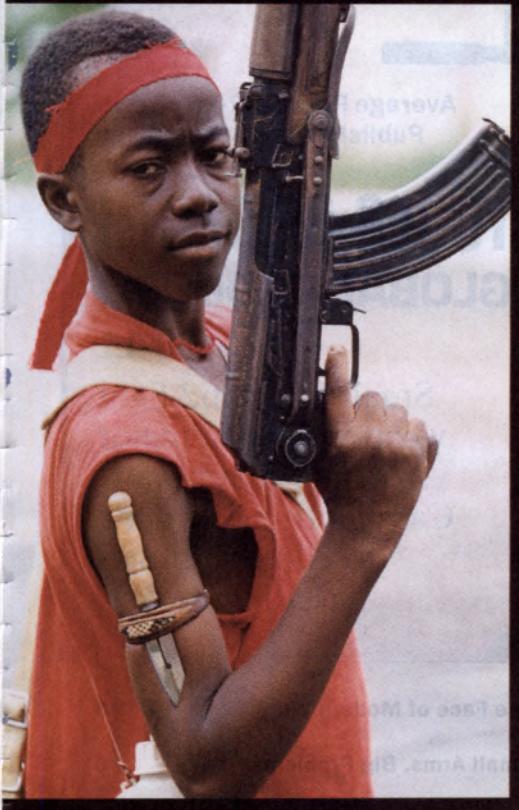


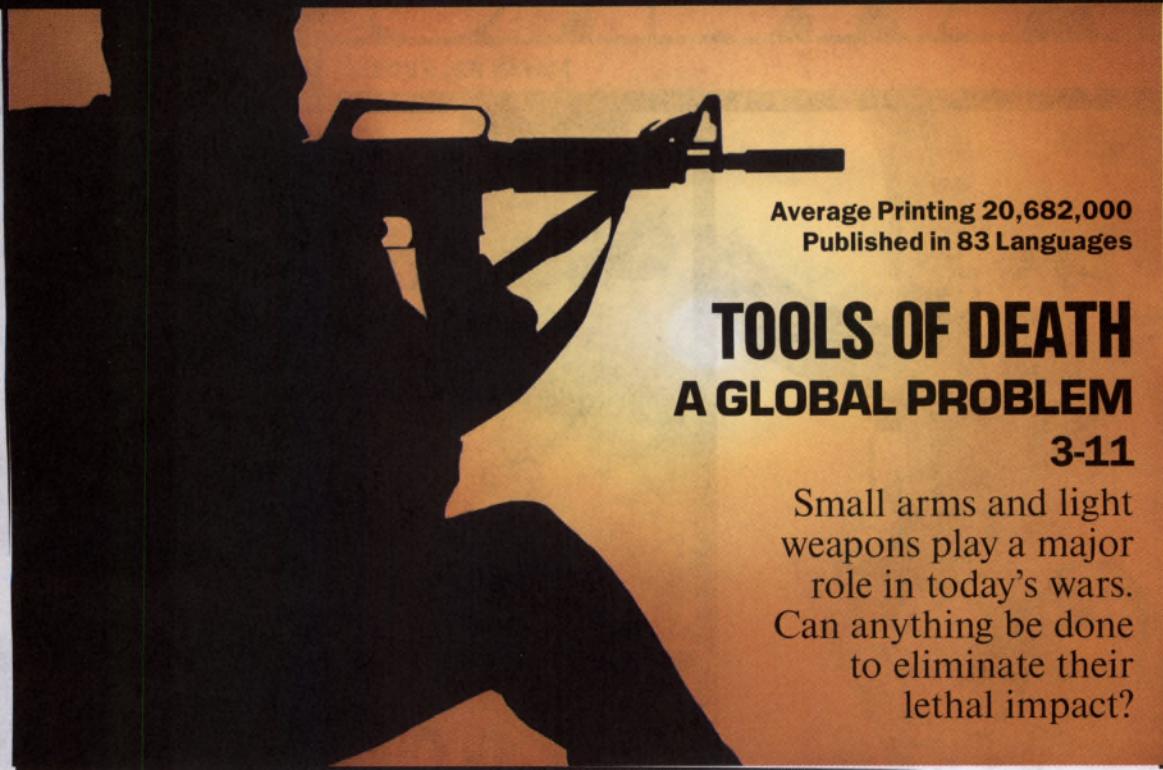
Awake!

March 22, 2001



TOOLS OF DEATH A GLOBAL PROBLEM



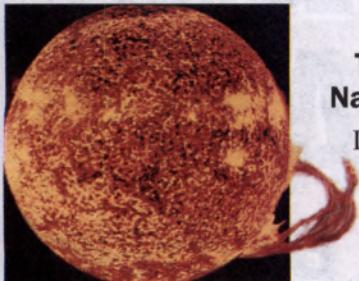


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TOOLS OF DEATH A GLOBAL PROBLEM

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Small arms and light weapons play a major role in today's wars. Can anything be done to eliminate their lethal impact?



The Exceptional Nature of Our Sun 15

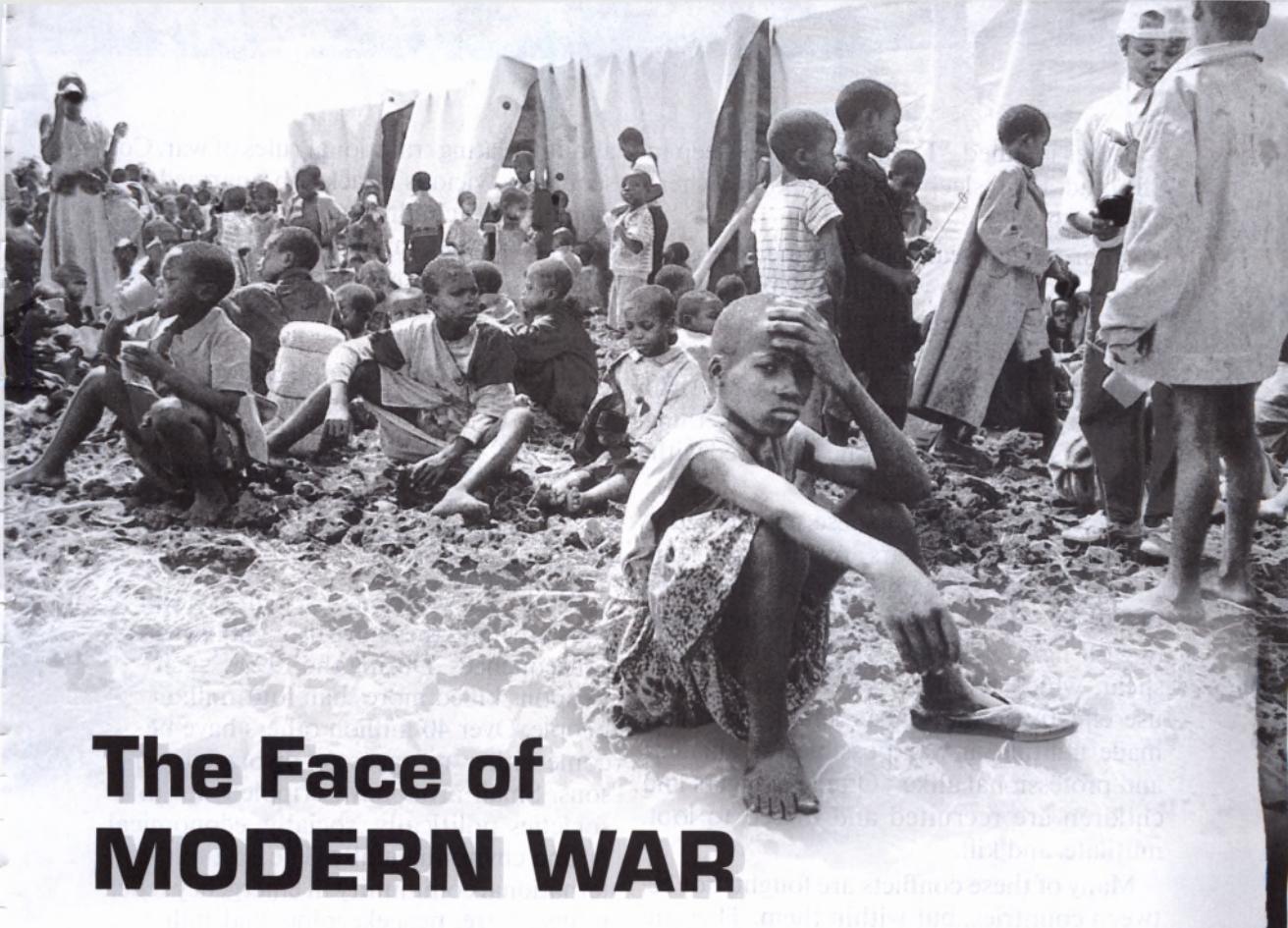
Learn about the unique features of the sun that make life on earth possible.



They Can Steal Your Identity! 19

Beware of a fast-growing crime—identity theft! How can you protect yourself from it?

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The Face of MODERN WAR

THE refugee camp had been set up in haste to care for the 1,548 refugees who had arrived suddenly from a neighboring African country. Tents of blue and khaki stood pitched in a muddy clearing amid a forest of palm trees. There was no electricity or bedding, and there were no water taps or toilets. It was raining. The refugees used sticks to gouge small trenches to keep the water from flooding the tents. Two international relief agencies feverishly worked to improve living conditions.

Earlier, the refugees had seized the opportunity to board a dilapidated freighter to escape the civil war that had ravaged their country for years. The war was not waged with lines of tanks or with heavy bombers. It began when about 150 soldiers armed with assault rifles swaggered into the coun-

try. During the years that followed, the soldiers seized village after village, exacting tribute from civilians, recruiting more soldiers, and killing anyone who stood in opposition. Eventually, they conquered the entire country.

One of the refugees in the camp was a young woman named Esther. "The worst experience I have ever had in my life was the loss of my husband in this war," she said. "They shot him. There is so much fear. You hear somebody shout, and you think someone is coming to kill you. Whenever you see someone with a gun, you think that he is going to kill you. I was never relaxed. Only here do I sleep at night. Back home, I could not sleep. Here I sleep like a baby."

"Even in these wet tents?" asked an *Awake!* writer.

UN PHOTO 18679/J. LISAEC

Esther laughed. "Even if I have to sleep in this mud, I will sleep better than I did where I came from."

Ambrose, ten years old, had spent most of his life fleeing from war zones with his family. "I would like to see peace and go back to school," he said. "After all, I'm getting big."

Kpana, nine years old, has beautiful brown eyes. Asked what the earliest thing was that she remembers, she answered without hesitation: "War! Fighting!"

The type of war that these people fled is common in recent years. According to one source, of the 49 major conflicts that have raged since 1990, 46 have been fought solely with light weapons. Unlike a sword or a spear, which requires skill and strength to use effectively in combat, small arms have made fighting in war possible for amateur and professional alike.* Often teenagers and children are recruited and forced to loot, mutilate, and kill.

Many of these conflicts are fought, not between countries, but within them. They are fought, not by trained soldiers on a battlefield, but, for the most part, by civilians in cities, towns, and villages. Because much of the fighting is done by those with no military training, there are few compunctions

* The term "small arms" refers to rifles and handguns—weapons that can be held by one person; the expression "light weapons" includes machine guns, mortars, and grenade launchers, which sometimes require two people to handle.

about violating traditional rules of war. Consequently, vicious attacks on unarmed men, women, and children are commonplace. It is believed that in today's wars more than 90 percent of those killed are civilians. In such wars small arms and light weapons play a major role.

Of course, guns do not directly cause conflict—humans fought long before gunpowder was invented. However, stockpiles of guns may encourage fighting rather than negotiation. Weapons may tend to lengthen the duration of wars and intensify the carnage.

While the weapons used in today's wars are light, they have brought heavy consequences. During the 1990's, such weapons killed more than four million people. Over 40 million others have become either refugees or displaced persons. Small arms have crippled war-torn societies politically, socially, economically, and environmentally. The cost to the international community in emergency relief, refugee care, peacekeeping, and military intervention has been tens of billions of dollars.

Why have small arms come to play such a major role in modern conflict? Where do they come from? What might be done to limit or eliminate their lethal impact? We will consider these questions in the following articles.

Awake!

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

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

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Small Arms, BIG PROBLEMS

FOR decades, arms-control talks centered on nuclear weapons. This is hardly surprising, since a single nuclear bomb can destroy an entire city. Yet, unlike smaller arms, these immensely powerful weapons have not been used in war in over 50 years.

Respected military historian John Keegan writes: "Nuclear weapons have, since 9 August 1945, killed no one. The 50,000,000 who have died in war since that date have, for the most part, been killed by cheap, mass-produced weapons and small-calibre ammunition, costing little more than the transistor radios and dry-cell batteries which have flooded the world in the same period. Because cheap weapons have disrupted life very little in the advanced world, outside the restricted localities where drug-dealing and political terrorism flourish, the populations of the rich states have been slow to recognise the horror that this pollution has brought in its train."

No one knows precisely how many small arms and light weapons are in circulation, but experts estimate that military-style firearms may number about 500 million. In addition, tens of millions of civilian-type rifles and pistols are owned by private citizens. What is more, new weapons are produced and fed into the market each year.

**Would you welcome more information? Write Watch Tower at the appropriate address.
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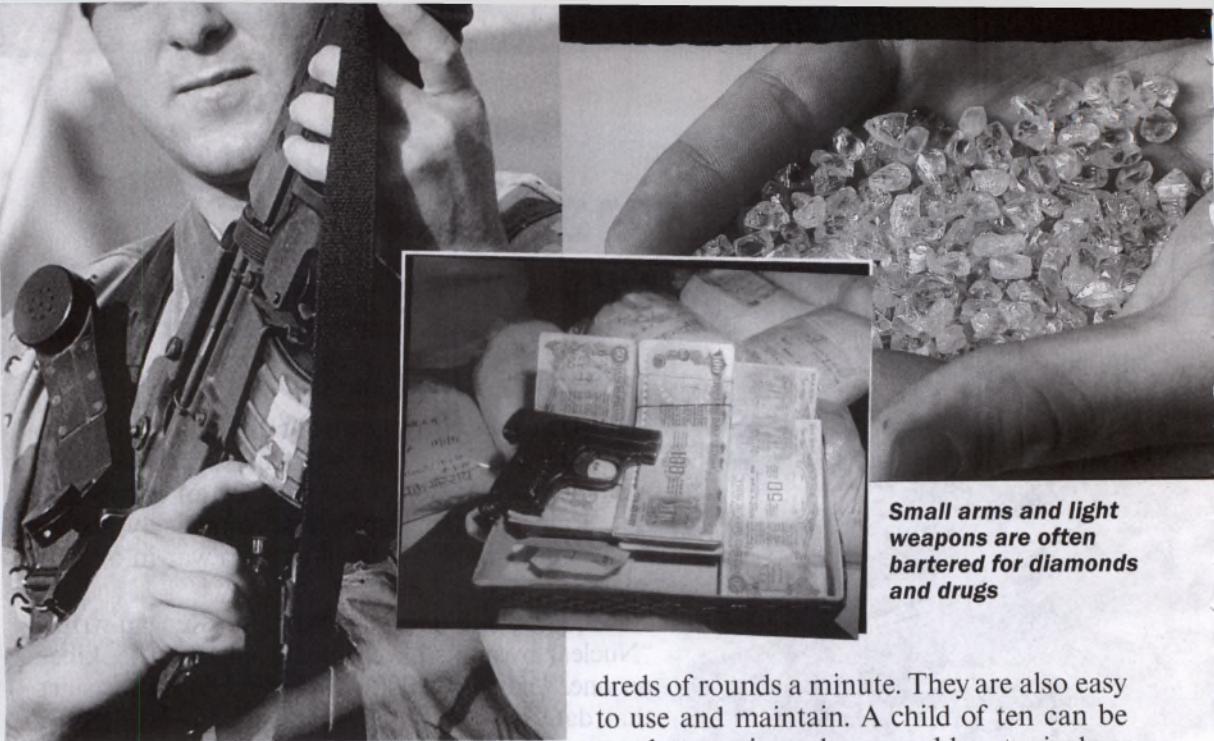
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Small arms and light weapons are often bartered for diamonds and drugs

Weapons of Choice

Why have small arms become the weapons of choice in recent wars? Part of the reason lies in the relationship between conflict and poverty. Most of the wars fought during the 1990's took place in countries that are poor—too poor to buy sophisticated weapon systems. Small arms and light weapons are a bargain. For example, 50 million dollars, which is approximately the cost of a single modern jet fighter, can equip an army with 200,000 assault rifles.

Sometimes, small arms and light weapons come far cheaper than that. Tens of millions of these weapons are simply given away by militaries that are downsizing, or they are recycled from one conflict to another. In some lands there is such an abundance of assault rifles that they are sold for as little as six dollars or can be traded for a goat, a chicken, or a bag of old clothes.

Yet, apart from low cost and wide availability, there are other reasons why small weapons are so popular. They are lethal. A single rapid-fire assault rifle can fire hun-

dreds of rounds a minute. They are also easy to use and maintain. A child of ten can be taught to strip and reassemble a typical assault rifle. A child can also quickly learn to aim and fire that rifle into a crowd of people.

Another reason guns are popular is that they are rugged and remain operational for years. Rifles such as the AK-47 and the M16, which soldiers carried in the Vietnam War, are still being used in wars of today. Some rifles used in Africa date back to World War I. Further, guns are easily transported and concealed. One packhorse can carry a dozen rifles to a paramilitary group located in a dense jungle or on a remote mountain. A column of horses can carry enough rifles to outfit a small army.

Guns, Drugs, and Diamonds

The global traffic in guns is complex. Huge supplies of guns pass legally from nation to nation. After the Cold War, armies in both the East and the West were reduced, and governments gave or sold excess equipment to friends and allies. According to a writer at the Peace Research Institute in Oslo, Norway, since 1995 the United States alone has given away more than 300,000 rifles, pistols, machine guns, and grenade launchers. It is

reasoned that giving weapons away is cheaper than dismantling or storing and guarding them. Some analysts estimate that perhaps three billion dollars' worth of small arms and light weapons legally cross national borders each year.

The illegal trade, however, may be much larger. Black-market weapons usually have to be purchased. In some African wars, paramilitary groups have bought hundreds of millions of dollars' worth of small arms and light weapons, not with money, but with diamonds seized from diamond-mining areas. *The New York Times* commented: "Where governments are corrupt, rebels are pitiless and borders are porous . . . The glittering stones have become agents of slave labor, murder, dismemberment, mass homelessness and wholesale economic collapse." How ironic that a gemstone traded for assault rifles may later be sold in an elegant jewelry boutique as an expensive symbol of eternal love!

Weapons are also linked to the illegal trade in drugs. It is not unusual for crimi-

nal organizations to use the same routes to smuggle drugs in one direction as they use to smuggle guns in the other. Weapons thus have become a virtual currency, bartered for drugs.

After the Guns of War Fall Silent

When wars end, the guns used in them often fall into the hands of criminals. Consider what happened in a country in southern Africa that experienced a shift from politically motivated violence to criminal violence. Political violence there took the lives of some 10,000 people in just three years. When that conflict ended, criminal violence soared. Competition between taxi drivers resulted in "taxi wars," where thugs were hired to shoot the passengers and drivers of rival companies. Increasingly, military-type assault rifles were used in robberies and other crimes. The number of homicides committed with guns reached 11,000 in one recent year, the second-highest rate in the world for countries not at war.

The knowledge that criminals are armed and dangerous creates fear and insecurity. In many developing countries, the wealthy live in virtual fortresses, surrounded by walls



COVER and Page 7: Boy soldier: Nanzer/Sipa Press

An Ex-fighter Feels "Pretty Stupid"

A boy soldier who fought in the same war that made refugees of the people spoken of in the first article suddenly became idle and penniless in the city that he had helped to conquer. He spoke with bitterness about seeing his leader's son riding around town on a flashy motorcycle and former warlords jockeying for power and vying for respectability. "When I think of the five years I spent in the bush, killing people and being shot at, I feel pretty stupid," said the fighter. "We were giving our lives for people who by tomorrow won't remember how they got where they are."

and electrified fences that are guarded day and night. Residents of developed countries also take precautions. This is true even in places that have not experienced civil strife.

So both in lands where there is war and in lands where there is "peace," guns contribute to instability. No human can measure the deadly work of guns; nor can we

tally the dead, the wounded, the bereaved, and the shattered lives. Yet, we do know that the world is awash with arms and that their numbers keep rising. Increasingly, voices cry for something to be done. But what can be done? What will be done? These are the questions we will consider in the following article.

"No Place to Hide"

The modern assault rifle, lethal though it is, has limitations. It shoots only bullets. It cannot kill people hidden behind strong walls or barricades. In the panic of combat, a soldier's aim may not be steady. Hand-held, even under ideal circumstances it is accurate only up to 500 yards.

The U.S. military has a solution for such "problems"—a new, high-tech, all-purpose rifle called the Objective Individual Combat Weapon (OICW). Light enough to be held by a single soldier, the OICW will shoot not only bullets but also 20-millimeter explosive shells—grenades. Another unique feature: It can kill enemies who hide behind barricades. All the soldier has to do is

to aim the gun at a point immediate-

ly above or beside the intended target. The gun automatically calibrates the distance to the chosen target and presets a tiny electronic fuse on the grenade so that it will detonate at exactly the right distance, spraying the victim with armor-piercing shrapnel. "Its unique capabilities will enable U.S. combat troops to virtually shoot around corners," said a representative of the company at work on the weapon. An infrared sight will enable the weapon to perform effectively even in darkness.

From this gun there is "no place to hide," boast its makers, who also claim that the weapon will be five times more lethal than the M16 and the M203 grenade launcher at up to twice the range. Soldiers using it do not have to fret about a steady aim; they need only look through the viewfinder and pull the trigger to unleash a fusillade of bullets and grenades. If development continues according to schedule, the first military unit will be equipped with the OICW by the year 2007.

Critics, however, are asking questions: How will the gun

be used when soldiers patrol crowded neighborhoods where enemy combatants are likely to be among innocent civilians? What happens when the OICW is sold to militaries throughout the world who may turn them against their own people? And what happens when the weapon gets into the hands of terrorists and criminals?





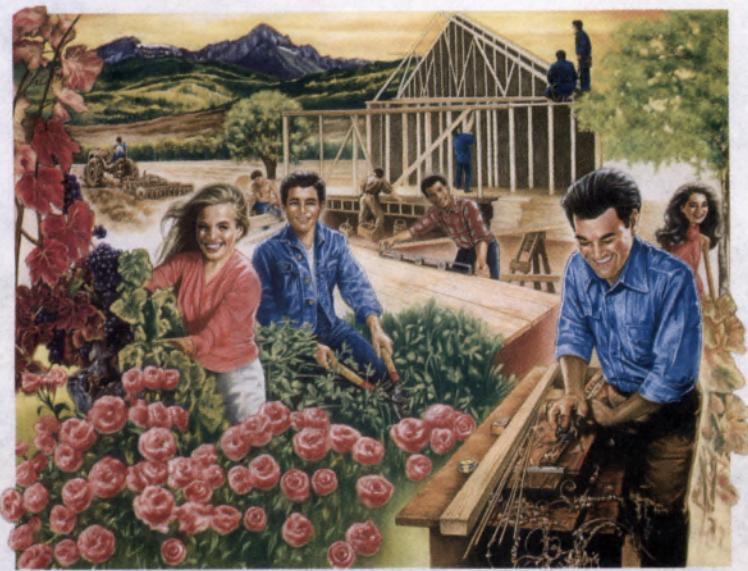
WHAT FUTURE for Arms Control?

IN RECENT years governments worldwide have discussed ways to combat the illegal trade in small arms. The subject has been considered by the United Nations General Assembly. Reports have been prepared, recommendations made, and resolutions adopted. Critics point out, however, that focusing solely on the black-market trade means that the biggest dealers in arms—governments themselves—are free from scrutiny.

There is, in fact, a hazy line between legal and illegal sales of weapons. Many illegal weapons were once sold legally. Weapons initially sold to the militaries or to police departments are frequently stolen and fed into the black market. Further, it is not unusual for weapons to be resold to a secondary recipient without the knowledge or permission of the original seller. An article in the journal *Arms Control Today* states: "National governments especially

will have to go beyond their support for cracking down on the illegal trade in light weapons and examine their own role in the current legal weapons trade." Though many hope that the nations will eventually crack down on the small arms trade, one journalist noted: "With the five permanent members of the [United Nations security] council alone responsible for more than 80% of the world's arms trade perhaps we should not hold our breath."

Adding to the problem of controlling the flow of small arms and light weapons is that such weapons are relatively easy to produce.



While the manufacture of complex weapons such as tanks, planes, and warships is limited to only about a dozen countries, over 300 manufacturers in some 50 nations now produce light weapons. The large and growing number of firearms manufacturers not only expands national arsenals but also multiplies opportunities to feed arms to militias, insurgent groups, and criminal organizations.

Hotly Disputed Issues

Thus far, much of our attention has centered on the use of small arms in war-torn countries. Yet, gun-control issues are hotly disputed in relatively stable lands where there is no war. Those who advocate strong gun-control laws assert that more guns lead to more murders. They argue that in the United States, where controls are lax and guns are plentiful, there is a high per capita murder rate, but in England, where there is strict gun control, there is a low murder rate. Opponents of gun-control legislation are quick to counter that in Switzerland most people have easy access to guns, but homicide rates are low.

To complicate matters further, studies suggest that the United States has a *non-gun* murder rate higher than the *total* murder rate of many European countries. Yet, there are other countries with *nongun* murder rates higher than the *total* murder rate in the United States.

It is common to use—and misuse—statistics to bolster a particular point of view. And in the arena of gun control, it appears that for every argument, there is a seemingly plausible counterargument. The issues are complex. Experts generally agree, however, that many factors, apart from gun ownership, influence homicide rates and crime.

The powerful National Rifle Association in the United States frequently remarks: “Guns don’t kill people; people do.” Ac-

cording to this view, a gun, though designed to kill, doesn’t kill by itself. A person has to pull the trigger, intentionally or by accident. Of course, some would argue, guns make it easier for people to kill people.

Beating Swords Into Plowshares

According to the Bible, the problem of people killing people will not be solved by merely removing guns from the hands of those intent on murder. Crime is a social problem, not simply a hardware problem. The real solution involves changing the attitudes and disposition of people themselves. The prophet Isaiah was inspired to write: “[God] will certainly render judgment among the nations and set matters straight respecting many peoples. And they will have to beat their swords into plowshares and their spears into pruning shears. Nation will not lift up sword against nation, neither will they learn war anymore.”—Isaiah 2:4.

This is not as farfetched as some may think. Isaiah’s prophecy is being fulfilled today among true Christians worldwide. Their symbolic conversion of weapons into implements of peace reflects a deep inner desire to please God and to live at peace with others. In time, under God’s Kingdom everyone on earth will live in total peace and security. (Micah 4:3, 4) Guns will not kill people. People will not kill people. Tools of death will be obsolete.

IN OUR NEXT ISSUE

Cities—Why in Crisis?

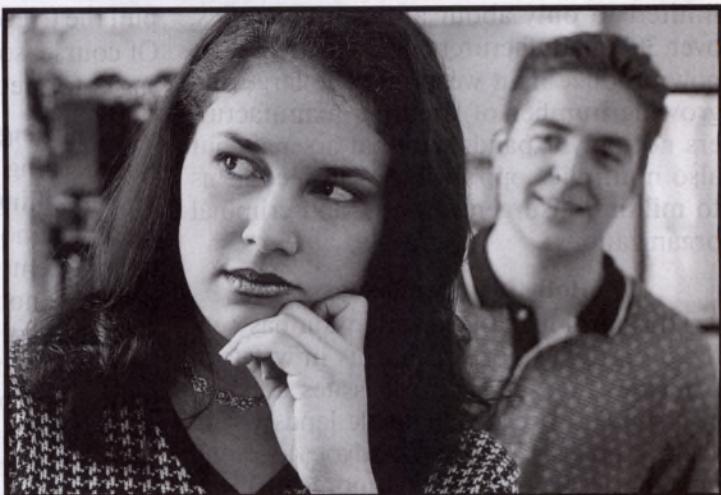
The Art and Science of Weather Forecasting

Are Dreams Messages From God?

YOUNG PEOPLE ASK . . .

"This summer a brother in my congregation fell in love with me. I never really liked him. The problem is, I didn't know how to say no without hurting his feelings."

—Elizabeth.*



How Can I Turn Him Down?

CHANCES are, you have heard the question, "Can I get to know you better?" Have you ever had a young man ask you that question? As a young woman,* you may have felt happy and flattered—even thrilled! On the other hand, you may have also felt so confused that you didn't know what to say in reply.

When someone expresses romantic interest in you, it can unleash a wide range of emotions. This is especially true if you are old enough to get married and are thus in a position to respond to such attention![△] Even so, much of how you react will be influenced by who is asking the question. If he is an emotionally mature person and you find yourself attracted to him, your answer may be easy. What, though, if he clearly does not have the qualifications to make a suitable

mate? Or what if, in spite of his possessing fine qualities, you are simply not interested in him?

Consider, too, the situation of a young woman who has dated someone for a while but has come to the realization that she does not want to spend the rest of her life with him. Instead of breaking things off, she continues going out with him. "How can I turn him down?" she asks.

When You Are Not Interested Romantically

Back in patriarchal times, people apparently married individuals whom their parents chose. (Genesis 24:2-4, 8) In Western lands most Christians are free to pick their own marriage mate. The Bible has one stipulation—that a Christian marry "only in the Lord."—1 Corinthians 7:39.

Does this mean that you should marry *any* fellow believer who expresses interest in you or whom you have dated for a short while? Well, consider the Bible example of a

* Some names have been changed.

“While this article is directed toward young women, the principles apply to young men as well.

[△] The dangers of dating while too young were discussed in our January 22, 2001, issue.

young country girl from the Middle Eastern village of Shunem. Solomon, her king, saw her and fell deeply in love with her. When he tried to pursue her, however, the young girl not only rejected him but also pleaded with the court women who waited on the king: "Try not to awaken or arouse love in me until it feels inclined." (Song of Solomon 2:7) This wise maiden did not want others to try to pressure her into being swayed by emotion. She was simply not interested in Solomon romantically, for she was in love with a humble shepherd.

This teaches an important lesson for those considering marriage today: You cannot have romantic love for just anyone. So even after dating someone for a while, a young woman might find that she is not interested in him romantically. Perhaps her feelings are based on some observable weakness in the other person's character. Or maybe she does not find herself attracted to him. It would be foolish to ignore such feelings. Merely ignoring them may not make them go away.* "There were so many doubts in my mind about him," said Tamara regarding the young man she was dating. "Not just little doubts but ones that really bothered me to the point of giving me a tense and nervous feeling when I was with him." She later realized that because of these doubts, it was best to end the relationship.

Why It's Hard to Say No

Still, turning a young man down may be easier said than done. Like Elizabeth, mentioned at the outset, you may be afraid of hurting him. Granted, we should be sensitive to the feelings of others. The Bible encourages Christians to 'clothe themselves with the tender affections of compassion' and to treat others as they would like to be treated. (Colossians 3:12; Matthew 7:12)

* See the article "Young People Ask . . . Should We Break Up?" appearing in the July 22, 1988, issue of *Awake!*

Does this mean, though, that you should carry on a pretense simply so that you do not disappoint or hurt this young man? Sooner or later he will no doubt find out how you really feel, and your failing to be honest and postponing the moment of reckoning will only add to the pain. Even worse would be your marrying the young man simply

You cannot have romantic love for just anyone

because you feel sorry for him. Pity is a poor foundation on which to build a marriage.

Perhaps, though, you are wrestling with the thought, 'If I don't marry him, I may not have a second chance.' As an article in *Teen* magazine put it, a girl might reason: "He's not 'the one,' but at least he's someone—and you really don't want to be alone." Admittedly, the longing for companionship is strong. Properly satisfying this desire, however, means more than having just anyone by your side. It involves finding someone whom you can truly love and who is capable of fulfilling the Scriptural responsibilities of marriage. (Ephesians 5:33) So do not be quick to settle for a mate! Many have come to regret marrying hastily.

Finally, some may continue dating even when it is clear that a young man has serious flaws. 'If I give him a little more time,' they reason, 'he may change.' Is this really sensible? After all, poor habits and patterns of behavior are often strongly entrenched and extremely difficult to change. And even if he makes some sudden and dramatic changes, can you really be sure that these changes are permanent? In one such situation, a young woman named Karen wisely decided

to break things off with a young man when she realized that they did not share the same goals. "It was hard," she admits, "because I was physically attracted to him. But I knew it was the right thing to do."

Handle With Care

Admittedly, turning someone down is no easy task. Like a package with a delicate item inside, the situation must be handled with care. Here are a few suggestions that might prove helpful.

Discuss the matter with your parents or with another mature one in the congregation. They might be able to help you determine if your expectations are perhaps a bit unrealistic.

Be clear and direct. Leave no room for doubt in his mind as to how you feel. Simply saying "No thanks" will discourage most would-be suitors. If necessary, state your refusal in stronger terms, such as, "I'm sorry, but I'm really not interested." Be careful not to give the impression that you might change your mind with a little more persistence on his part. Making it clear that you have no romantic feelings for him should prevent any confusion and make it easier for him to get over his disappointment.

Balance honesty with tactfulness. Proverbs 12:18 states: "There exists the one speaking thoughtlessly as with the stabs of a sword." While being forthright is important, the Bible says that our utterances must be "with graciousness, seasoned with salt."—Colossians 4:6.

Stick to your decision. Well-intentioned friends, who likely know little of

the reasons behind your decision, may pressure you to give the relationship another chance. But ultimately *you* have to live with your decision—not your well-meaning friends.

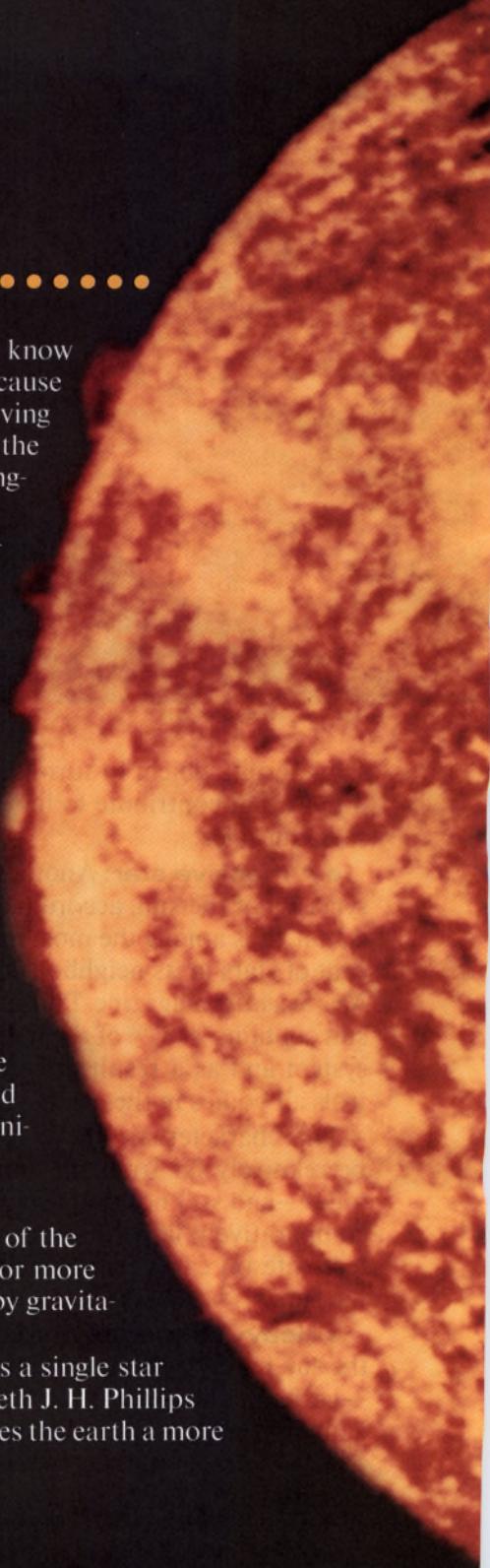
Act in harmony with your words. Formerly the two of you may have been good friends, and it is only natural to wish that things could go back to the way they were. But usually that is neither practical nor possible. His feelings for you have become romantic. Is it realistic to think that he can simply ignore those feelings and pretend that nothing has happened? So while it is obviously better for you to treat each other cordially, regularly talking on the phone or spending a lot of time together in social situations will likely only fuel his misery. It could amount to toying with his emotions, and that would not be kind on your part.

The apostle Paul urged Christians to "speak truth" with one another. (Ephesians 4:25) Doing so may be hard, but it may help you both to move on with your lives.

Be clear and direct in expressing your feelings



The Exceptional Nature of Our Sun



AS YOU read this article, either the sun is up or you know it will rise before long. Is that important? Yes, because without the radiance of the sun, earth's trillions of living things—including you—would not be here. Gone would be the variety of life distributed among the millions of species, ranging from single-celled bacteria to immense whales.

It is true that only about half a billionth of the sun's energy output reaches our planet. Yet, even those few "crumbs" from the solar "table" are enough to nourish and sustain life on earth. Not only that, but if this tiny trickle that arrives could be harnessed efficiently, it could easily meet the energy needs of our modern society, with power to spare.

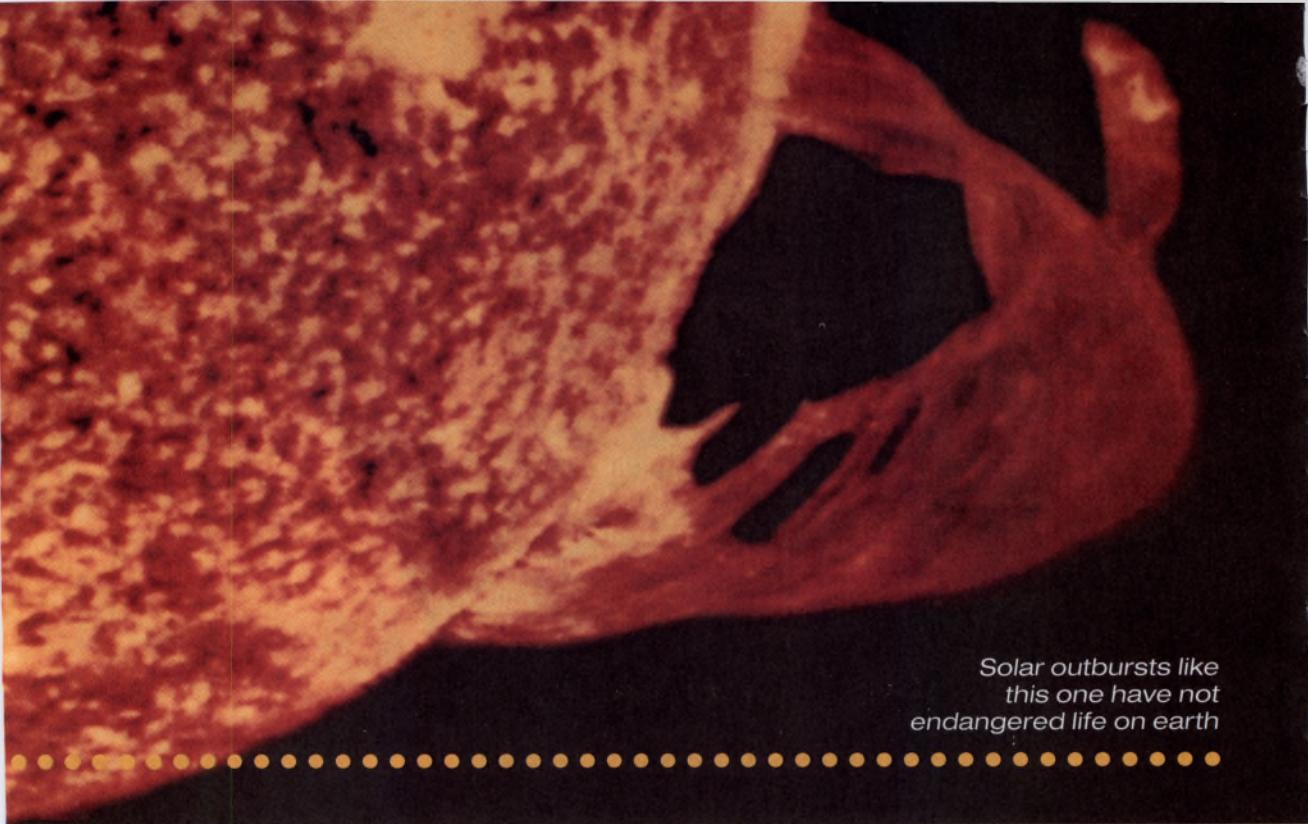
Most astronomy books say that our sun is an ordinary star, "a rather commonplace celestial object." But is the sun in every respect a "commonplace celestial object"? Guillermo Gonzalez, an astronomer at the University of Washington in Seattle, has suggested that our sun is exceptional. Should this affect the search for life on other planets? Gonzalez answers: "There are fewer stars suitable for intelligent life than people realise." He adds: "Unless astronomers narrow down their search to stars as exceptional as the Sun, they are wasting much of their time."

What are some characteristics that make our sun suitable for nurturing life? As we examine these factors, we should keep in mind that many statements on the physics of the universe are theoretical in nature.

Intriguing Characteristics

- **A single star:** Astronomers estimate that 85 percent of the stars in the neighborhood of the sun are in groups of two or more stars that orbit one another. Such stars are bound together by gravitational forces.

The sun, however, is a single star. "The case of the sun as a single star seems, then, to be rather unusual," writes astronomer Kenneth J. H. Phillips in his book *Guide to the Sun*. That single status of the sun gives the earth a more



Solar outbursts like
this one have not
endangered life on earth

Pages 2, 15, and 16: NASA photo

stable orbit, which, in turn, makes for conditions that contribute to life on this globe, says Gonzalez.

• **A massive star:** Another related idiosyncrasy of the sun, according to Gonzalez, is that "it is among the most massive 10 percent of stars in its neighbourhood," reports *New Scientist* magazine. Phillips notes: "The sun contains 99.87% of the mass of the solar system and as a result gravitationally controls all bodies in the solar system."

This characteristic allows for the earth to be relatively far from the sun—93 million miles—and still not pull away from it. This comparatively large distance, in turn, protects life on earth from being scorched by the sun.

• **Heavy elements:** Gonzalez notes that the sun has 50 percent more heavy elements—carbon, nitrogen, oxygen, magnesium, silicon, and iron—than other stars of its age

and type. In this, our sun stands out among its peers. "The abundances of heavy elements in the sun are very low," says Phillips, "but some stars . . . have even lower heavy-element abundances." In fact, stars that have heavy-element abundances like that of the sun belong to the specific category called Population I stars.

How does this relate to the existence of life on earth? Well, the heavy elements are necessary to support life. But they are rare, making up less than 1 percent of the universe. Our earth, though, consists almost entirely of the heavier elements. Why? Because, astronomers say, the earth orbits such an unusual home star—our sun.

• **A less elliptic orbit:** Another advantage arises from the sun's being a Population I star. "Population I stars are generally performing nearly circular orbits round the centre of the galaxy," says the book *Guide to*

the Sun. The sun's orbit is less elliptic than that of other stars of its age and type. Why would that affect the existence of life on earth? Because the circularity of the sun's orbit prevents the sun from plunging into the inner galaxy, which is frequented by supernovas (exploding stars).

● **Variation in brightness:** Here lies another interesting fact about the star of our solar system. Compared with similar stars, the sun has significantly less variation in brightness. In other words, its luminosity is more stable and constant.

Such a relatively stable output of light is critical for life on earth. "Our very presence on the planet," says science historian Karl Hufbauer, "is evidence that the sun's luminosity is one of the more stable environmental factors."

A coincidence? A size match between the sun and the moon makes for spectacular eclipses

Only about half a billionth of the sun's energy output reaches our planet

● **Tilt of the orbit:** The sun's orbit is only slightly inclined to the galactic plane of the Milky Way. That means that the angle between the plane of the orbit of the sun and the plane of our galaxy is very small. How does this contribute to the welfare of life on earth?

Far beyond the ends of our solar system, a vast spherical reservoir of comets, called the Oort cloud, surrounds us.* Suppose that the inclination of the sun's orbit to the galactic plane were greater. Then the sun would abruptly cross the plane of our galaxy, which could stir up the Oort cloud. What would the result be? The earth would be bombarded with a catastrophic rain of comets, say astronomers.

What Can Solar Eclipses Tell Us?

There are at least 60 moons in our solar system. They orbit seven of the system's nine planets. The earth, however, seems to be the only planet in the solar system that enjoys the spectacle of total eclipses. Why is that?

A solar eclipse occurs when the moon comes between the sun and the earth. To get a perfect overlap, the apparent sizes of

* For more information on the Oort cloud, see the *Awake!* of July 22, 1999, page 26.



If the orbit of the sun were different, a catastrophic rain of comets could bombard the earth

what is needed is an exact combination of the right distance between sun and earth as well as a moon of the right size—and this on top of all the other considerations regarding the nature of the sun. What are the chances that all of this is coincidental?

A Coincidence?

Suppose you take your car to a trained and skilled technician for a tune-up. He diligently finishes his job, and you find everything to be in order. How do you think he will react if you later insist that the precise tune-up of your car was accomplished by mere accident or that it was the result of pure chance?

The same question may very well be asked about the exceptional nature of our sun. Some scientists would have you believe that the make-up of our sun, its orbit, its distance from the earth, and its other characteristics are all merely a fortunate coincidence. Does this make sense? Do you think it is a logical conclusion?

Just as a masterfully calibrated motor vehicle tells us something about the training and skill of the technician, so our sun—among other celestial bodies—is telling us something. The exceptional qualities of our home star that make life possible on earth convey the clear message that this star is the handiwork of an intelligent and powerful Designer and Creator. The apostle Paul put it this way: “His invisible qualities are clearly seen from the world’s creation onward, because they are perceived by the things made, even his eternal power and Godship.”—Romans 1:20.

the sun and the moon have to be roughly the same, so that the moon almost totally covers the sun. And this is exactly the case! Although the sun is 400 times bigger in diameter than the moon, it is also nearly 400 times farther away from the earth than is the moon.

But the earth's distance from the sun—and thus the apparent size of the sun—is more than simply a factor in the forming of a total eclipse. It is also a vital condition for the existence of life on earth. “If we were a little nearer or farther from the Sun,” Gonzalez says, “the Earth would be too hot or too cold and so uninhabitable.”

There is more. Earth's unusually large moon helps life on this planet because its gravitational pull prevents the earth from wobbling around too much on its axis. Such wobbling would cause wild and catastrophic swings in climate. So to have life on earth,



THE young woman started getting nasty messages on her answering machine from several men. Then a man reached her by phone and said that he was responding to the indecent invitations she had posted on the Internet. But she did not even own a computer. It took her a while to find out that someone had assumed her identity in cyberspace and was posting the ads on the Internet. Not only that, but the shadowy impostor was giving out her address, directions to her residence, and even advice on how to bypass her house alarm!

Most of us take our identity for granted. We are who we are, and if challenged, we can prove it. But the items we often use as evidence of our identity—birth certificate, identification number,* driver's license, passport, identification cards, and the like—are becoming so easy to counterfeit or steal that a new crime term has emerged, "identity theft."

An Epidemic of Fraud

This breed of crime is complex, insidious, and potentially devastating. Victims suddenly

discover that someone is running up huge bills, cheating creditors, and causing other havoc in their name. In some lands the law protects the victims from having to pay for these charges, but they can end up with a damaged reputation and bad credit.

Law-enforcement agencies, credit-industry insiders, and consumer groups widely acknowledge that identity theft is causing billions of dollars of losses annually. There is no way of knowing exactly how many people are defrauded through identity theft. One of the biggest problems is that months may go by before a person finds out that his identity has been stolen. Some law-enforcement authorities call identity theft the fastest-growing crime in the United States. Similar problems are reported in other countries.

To make things worse, thieves know that identity fraud is difficult to investigate and that it is seldom prosecuted. "To criminals, it's a faceless crime," observes Cheryl Smith, a special investigator. "The victim is a bank or department store. They're not thinking about harming an individual."

Preying on Your Very Name

Identity thieves usually steal one or more key pieces of your personal data, such as an identification number or a driver's license.

* In many countries citizens and residents are assigned some sort of an identification number. This may be used not only for personal identification but also for taxation and medical care. In the United States, citizens receive what is called a Social Security number. The term for such identification numbers varies from country to country.

Then they use it to impersonate you and open up credit accounts in your name. At the same time, they divert the ensuing paperwork to their own mail drop. They spend as much as they can as quickly as they can. You will not know what is happening until the collection agencies start calling.

How do these unscrupulous individuals steal such personal information? It is very easy. It often starts with collecting personal data that many people casually give out on credit applications or to telemarketers. Some crooks resort to 'dumpster diving'—digging into your trash cans for bank, mortgage, or credit records. Others intercept financially related mail from mailboxes. 'Shoulder surfers' are thieves who use cameras or binoculars to watch their victims punch in numbers at automated teller machines (ATMs) or public phones. In some countries much personal information is readily available at courts, in public documents, or on the Internet.

Stealing Your Good Name

Once the crook has your identification number, he may also need to get other identifying information, such as your birth date and your address and phone number. With this information, and maybe a false driver's license with his own picture on it, the thief can begin the crime. A thief will apply for instant credit in person or through

the mail, posing as you. He often provides an address of his own, claiming that he has moved. In their rush to issue credit, credit inspectors do not always verify information or addresses.

So once the impostor opens the first account, he can use this new account along with the other pieces of identifying information to add to his credibility. This further facilitates the proliferation of the fraud. Now the crook is well on his way to getting rich and, while he is at it, ruining your credit and good name.

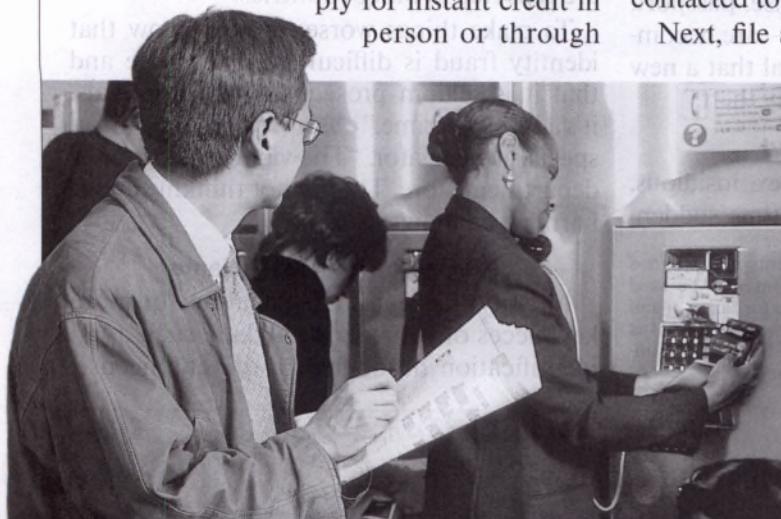
Repairing the damage can be difficult, time-consuming, and frustrating. Mari Frank, an attorney from California, found out how hard this can be when an impostor ran up about \$100,000 worth of bills in her name. "I had to write 90 letters and spent 500 hours working to clear my name," she says. "It's a fight for your credit and your sanity. . . . Most of the time you don't know who is doing it, and the perpetrators never get caught."

What to Do

If you are the victim of an identity thief, there are a number of steps you can take. First of all, it is recommended that you call and notify the fraud divisions of the credit bureaus in your area. Then follow up with a written statement, and request that you be contacted to verify future credit requests.

Next, file a report with the police. Make sure that you get a copy of the police report because you may need it to notify creditors.

'Shoulder surfers' watch their victims punch in numbers at public phones or automated teller machines



'Dumpster divers' dig through trash to steal personal information

You must also notify the banks and credit card companies you do business with. Even if the thief uses stolen information to produce new credit cards, you will be safest if you have all your credit cards reissued. Also, if your checking and savings accounts have been attacked, you may need to open new ones. In addition, you may need to obtain new ATM cards and new personal identification numbers.

Any Solutions in Sight?

Governments, law-enforcement agencies, and credit institutions are scrambling for ways to prevent identity theft. In some areas, bills have been passed that make this crime a felony and that better protect personal information. Other high-tech measures have been proposed. These include digital fingerprints encoded on cards, ATM cards that recognize a palm print or a voice pattern, a chip card that can store such personal identifying



information as blood type and fingerprints, and cards with a signing strip that cannot be erased.

Apart from such sophisticated preventive methods, there are practical things that you can do to safeguard yourself. (See the box "How to Protect Yourself From Identity Theft.") With some forethought and careful planning, you may help to reduce the risk of identity theft!

How to Protect Yourself From Identity Theft

- Only give out your identification number when absolutely necessary.
- Do not carry extra credit cards, your identification card, birth certificate, or passport in your purse or wallet, except when necessary.
- Shred or rip up preapproved credit applications before throwing them away. Do the same with bank statements, phone bills, credit card receipts, and so forth.
- Use your hand as a shield when using an automated teller machine or when making long-distance phone calls with your phone card. 'Shoulder surfers' may be nearby with binoculars or a camera.
- Obtain a locked mailbox to reduce mail theft.

- Pick up new checks at the bank instead of having them sent to you by mail.
- Keep a list or a photocopy of all credit account numbers, and keep it in a safe place.
- Never give out your credit card number or other personal information over the phone unless you have a trusted business relationship with the company and you have initiated the call.
- Memorize your password. Do not keep a written record of passwords in your purse or wallet.
- Get a copy of your credit report regularly if possible.
- Have your name removed from promotional lists operated by credit reporting bureaus and those who extend credit.

A GLIMPSE OF Paradise

BY AWAKE!
WRITER IN SPAIN



ELEPHANTS, tigers, and gazelles do not usually roam around abandoned mines. Surface mining has a reputation for leaving a landscape scarred and desolate, not suitable as a refuge for exotic animals.

But in the Cabárceno Nature Park in the Spanish province of Cantabria, a unique experiment has shown that even the most unpromising sites can be beautified and converted into a virtual paradise.

For some 3,000 years, Cabárceno was renowned for its high-quality iron ore. Celtic miners discovered that the ferric oxide, found naturally in the area, could easily be converted into iron—an indispensable metal for Celtic tools and weapons. For many centuries the Romans also exploited the mineral deposits.

Since the ore was found near the surface, the ancient miners laboriously removed the rich granular deposits with picks and shovels, leaving behind hundreds of rocky turrets that did not contain any ore. They thus inadvertently created striking karst-like scenery, usually associated with limestone outcrops that are carved by water rather than the human hand.

With the arrival of the Industrial Revolution, however, modern machinery was used to demolish what was left of the mountain in order to recover the precious ore that still remained. Finally, when the bulldozers had extracted all the mineral wealth that the mountain had to offer, the mine closed its gates in 1989. Only a few rusty machines at the entrance of Cabárceno testify to its industrial heritage.

From Moonscape to Landscape

Undoubtedly, it is easier to ruin a landscape than to restore it. Undeterred, the local authorities of Cantabria took up the challenge of creating a zoological park out of a landscape that looked more like a moonscape.

Their success depended principally on the earth's natural ability, when given sufficient respite, to heal itself. In addition, the landscapers worked hard to repair the damage done by centuries of neglect and exploitation. Within a couple of years, thousands of trees were planted, the topsoil was replaced, ugly potholes were converted into attractive lakes, and old railroad tracks became footpaths. Finally, specially selected animals were placed in large enclosures to complete the transformation.

The 600,000 yearly visitors to the Cabárceno Nature Park evidently feel that the effort is worthwhile. Not a few have exclaimed excitedly: "This is a paradise!" The word "paradise" is well chosen, since it was used by ancient Persians and Greeks to refer to a large, well-watered park of unspoiled beauty where animals could graze in relative freedom.

At a time when so many natural landscapes have been ruined, it is refreshing to visit a place where beauty has been restored and embellished. Moreover, what has been achieved on a small scale at Cabárceno well illustrates what this marvelous earth is capable of.

Brown bears now climb cliffs once chiseled out by Roman miners. Elephants and gazelles graze on lush pastures that carpet an area formerly stripped bare by excavators. Young tigers romp around granite outcrops sculptured unwittingly by Celtic picks and shovels. And this transformation was achieved within a few short years!

The Bible promises that one day, in harmony with God's original purpose for mankind, the whole earth will be a paradise. (Genesis 1:28; 2:15; Isaiah 65:17, 22-25; Luke 23:42, 43) Nature parks such as Cabárceno not only give us a glimpse of what such a future paradise will be like but also remind us that such a promise is well within the power of our Creator.

All pictures: Parque de la Naturaleza de Cabárceno ►



THE MARVELS OF THE Circulatory System

IMAGINE a home with a plumbing system so sophisticated that the fluid flowing through it can safely carry food, water, oxygen, and waste products. More than that, these pipes have the means to repair themselves and can proliferate with changing demands of the home. What engineering brilliance!

Yet, your body's "plumbing" does even more. Besides helping to regulate your body temperature, it carries a bewildering array of hormones, or chemical messengers, and potent defenses against diseases. The whole network is also soft and pliable, allowing it to absorb shocks and to flex with your body members. No human engineer could design such a system, yet that is what the Creator did when he formed the veins, arteries, and capillaries of the human body.

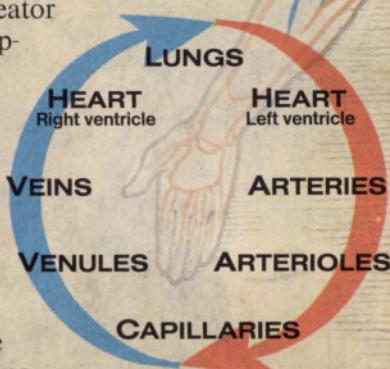
The System's Main Components

The human circulatory system is really two systems that work together. One is the cardiovascular system, which includes the heart, the blood, and all the blood vessels. The other is the lymphatic system—a web of vessels that transport excess fluid, called lymph, from the body's tissues back into the bloodstream. If the blood vessels of just one adult were laid end to end, they would stretch out for 60,000 miles and could encircle the earth two and a half times! This extensive system carries life-giving blood, which makes up about 8 percent of the body's weight, to billions of cells.

The powerhouse behind the cardiovascular system is, of course, the heart. About the size of your fist, it pumps at least 2,500 gallons of blood throughout your body daily—roughly the equivalent of raising a one-ton weight to a height of 40 feet every 24 hours!

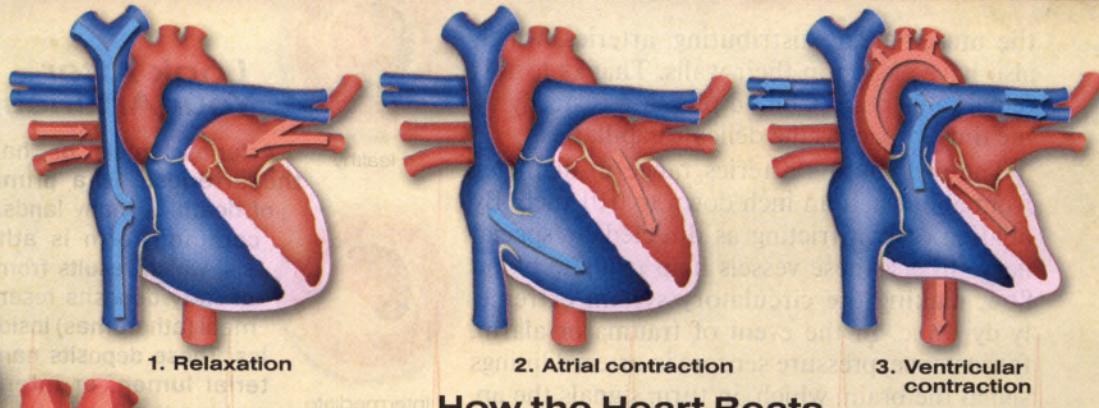
A Tour of the Cardiovascular System

What path does the blood take? Let us begin with the oxygen-depleted blood arriving at the heart through the two large veins—the superior (top) and inferior (bottom) venae cavae. (See diagram.) These veins empty into the first chamber of the heart, the right atrium. The right atrium then squeezes the blood into a more muscular chamber,

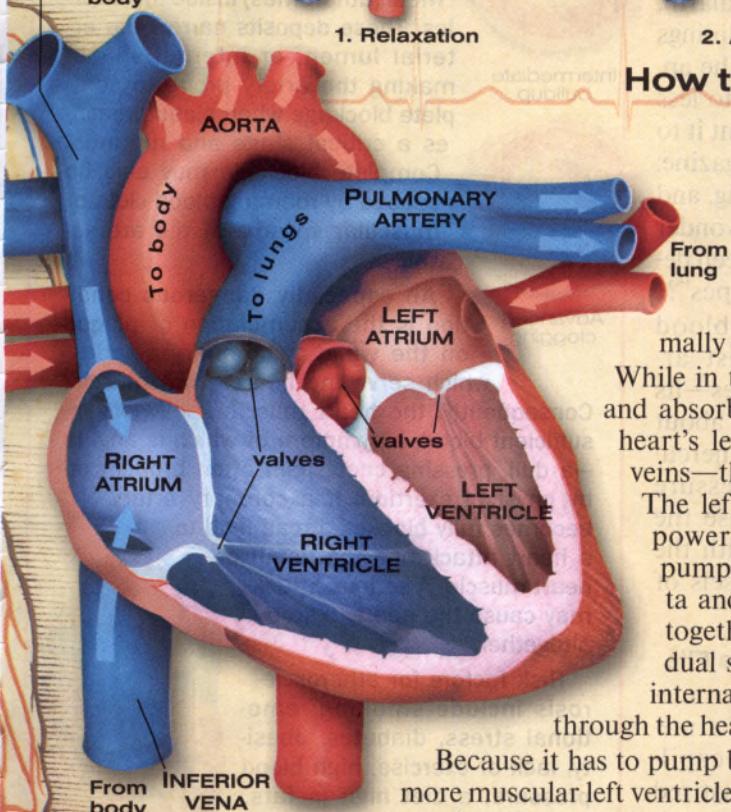


The Cardiovascular System





How the Heart Beats



the right ventricle. From here the blood goes to the lungs through the pulmonary trunk and the two pulmonary arteries—the only *arteries* carrying oxygen-depleted blood. This is normally done by veins.

While in the lungs, blood releases carbon dioxide and absorbs oxygen. It then flows down into the heart's left atrium through the four pulmonary veins—the only *veins* carrying oxygen-rich blood. The left atrium empties into the heart's most powerful chamber, the left ventricle, which pumps oxygenated blood out through the aorta and into the body. The two atria contract together followed by the two ventricles, the dual sequence constituting a heartbeat. Four internal valves ensure a one-way flow of blood through the heart.

Because it has to pump blood to the extremities of the body, the more muscular left ventricle has about six times the force of the right ventricle. The resulting pressure could easily cause aneurysms (bulges or dilations in arterial walls) or even potentially deadly strokes in the brain were it not for an ingenious mechanism for absorbing the pressure surges.

Elastic Arteries

Your body's largest artery, the aorta, and its main branches constitute the "elastic arteries." Their lumen, or internal space, is large, allowing blood to flow easily. They also have thick, muscular walls enmeshed with concentric sheets of elastin, a rubberlike protein. When the left ventricle pumps blood into these arteries, they expand or swell, absorbing the high pressure and propelling the blood toward the next group of arteries,

the muscular, or distributing, arteries, which also have elastin in their walls. Thanks to this remarkable design, blood pressure is steady by the time it reaches the delicate capillaries.*

The distributing arteries range in diameter from about half an inch down to 0.01 inch. By dilating or constricting as directed by special nerve fibers, these vessels help regulate blood flow, making the circulatory system extremely dynamic. In the event of trauma or alarm, for instance, pressure sensors in arterial linings signal the brain, which, in turn, signals the appropriate arteries to restrict blood flow to less important areas such as the skin and shunt it to the vital organs. Says *New Scientist* magazine: "Your arteries can 'feel' the blood flowing, and respond." Is it any wonder that arteries have been described as "smart pipes"?

Photograph of capillaries with red blood cells in single file

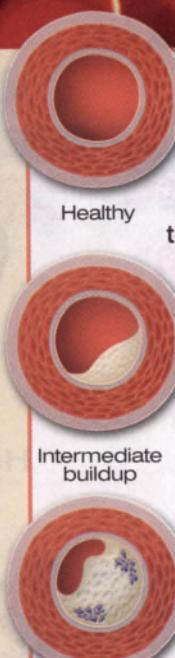


Red Cells in Single File

Eight to ten micrometers (millionths of a meter) in diameter, capillaries are so fine that red blood cells pass through in single file. Although capillary walls are just a

* Blood pressure is measured by the distance, in millimeters, it elevates a column of mercury. The upper and lower pressures caused by the beating and relaxing of the heart are called the systolic and diastolic pressures.

These vary in individuals as a result of their age, sex, mental and physical stress, and fatigue. Blood pressure tends to be lower in women than in men, lower in children, and higher in the elderly. Although opinions may vary slightly, a healthy young person may have a reading of 100 to 140 millimeters of mercury systolic, and 60 to 90 millimeters diastolic.

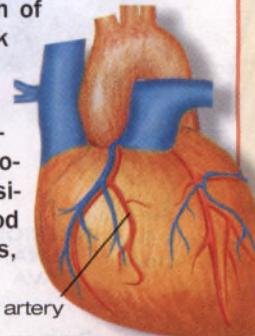


Look After Your Arteries!

Arteriosclerosis, or "hardening of the arteries," is a primary cause of death in many lands. The most common form is atherosclerosis, which results from a buildup of fatty deposits resembling oatmeal (atheromas) inside the arteries. These deposits narrow the arterial lumen, or internal space, making the artery prone to complete blockage when plaque reaches a critical stage and ruptures. Complete blockage may also be caused by roaming blood clots or muscular spasms of the arterial wall.

An especially dangerous condition is the accumulation of plaque on the walls of coronary arteries, which serve the heart's own muscle. Consequently, the heart muscle itself gets insufficient blood, a symptom of which is angina—a dull, pressing chest pain often brought on by physical exertion. If a coronary artery becomes fully blocked, it can lead to a heart attack and the death of heart muscle. A serious attack may cause the heart to stop altogether.

Risk factors for atherosclerosis include smoking, emotional stress, diabetes, obesity, lack of exercise, high blood pressure, a diet high in fats, and genetic predisposition.



single layer of cells thick, they transfer nutrients (carried in the plasma, or the fluid part of the blood) and oxygen (transported by red cells) to adjacent tissues. At the same time, carbon dioxide and other wastes diffuse from the tissues back into the capillaries for disposal. By means of a tiny nooselike muscle called a sphincter, capillaries can also regulate the

blood flowing through them according to the needs of the surrounding tissue.

From Venules to Veins to the Heart

When blood leaves the capillaries, it enters tiny veins called venules. Between 8 and 100 micrometers in diameter, venules join to form veins that return blood to the heart. When blood reaches the veins, it has lost nearly all its pressure, so venous walls are thinner than arterial walls. They also have less elastin. However, their lumen is larger, resulting in the veins' holding fully 65 percent of your body's blood.

To compensate for their low blood pressure, veins have an ingenious way of getting blood back to the heart. First, they are equipped with special cuplike valves that prevent gravity from draining the blood away from the heart. Second, they employ your body's skeletal muscles. How so? When your muscles flex, say in your legs as you walk, they compress nearby veins. This, in turn, forces blood through the one-way valves toward the heart. Finally, pressures in the abdomen and chest cavity, altered by breathing, help the veins empty their contents into the right atrium of the heart.

The cardiovascular system is so efficient that even when a person is at rest, it returns about 5 quarts of blood to the heart every minute! Walking increases this to about 8 quarts, and a fit marathon runner might have 37 quarts of blood coursing through his heart every minute—a sevenfold increase over the resting volume!

In some instances venous valves may leak because of a genetic predisposition or because a person develops obesity, becomes pregnant, or stands for long periods of time. When these valves fail, blood forms pools below them, causing the veins to distend and become what is known as varicose veins. Similarly, straining, such as to deliver a baby or to effect a bowel movement, increases pressure on the abdominal cavity, which impedes the return of blood from the veins of the anus and the large intestine. When this happens, varicose veins called hemorrhoids may result.

The Lymphatic System

When capillaries deliver nutrients to the tissues and retrieve wastes, they pick up slightly less fluid than they deliver. Important blood proteins leak out into the tissues. Thus, the need for the body's lymphatic system. It collects all the excess fluid, called lymph, and returns it to the bloodstream by way of a large vein at the root of the neck and another in the chest.

As with arteries and veins, there are several orders of lymphatic vessels. The smallest, the lymph capillaries, occur in beds of blood capillaries. Highly permeable, these tiny vessels absorb excess fluid and channel it to larger lymphatic collecting vessels that carry lymph to the lymph trunks. These unite to form lymph ducts, which, in turn, empty into the veins.

Lymph flows only one way—toward the heart. Hence, lymphatic vessels do not form a circuit as the cardiovascular system does. Weak muscle action in the lymph vessels, aided by the pulsation of nearby arteries and the movement of limbs, helps to propel lymph fluid through the system. Any blockage of lymphatic vessels causes fluid to accumulate in the affected region, creating a swelling called an edema.

Lymphatic vessels also provide routes for disease organisms. Hence, our Creator empowered the lymphatic system with potent defenses, the lymphoid organs: the lymph nodes—scattered along the lymphatic collecting vessels—the spleen, the thymus, the tonsils, the appendix, and the lymphoid follicles (Peyer's patches) in the small intestine. These organs help to produce and house lymphocytes, the primary cells of the immune system. A healthy lymphatic system, therefore, contributes to a healthy body.

Here our journey around the circulatory system ends. Yet, even this brief tour has revealed an engineering wonder of astounding complexity and efficiency. What is more, it goes about its endless tasks quietly, without your conscious awareness—unless it gets sick. So look after your circulatory system, and it, in turn, will look after you.

WATCHING THE WORLD

The Mind Affects the Heart

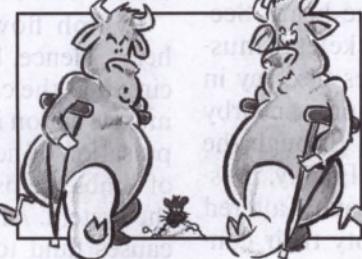
Mental stress increases the risk of a second heart attack, notes *Tufts University Health & Nutrition Letter*, yet "there's growing evidence that the mind plays a role in the development of heart disease, too." Recent studies show that "anger-prone people have a nearly threefold higher risk than others of suffering a heart attack or dying from heart disease" and that "the effects of hostility appear to take hold relatively early in life." Stress damages the heart muscle and the blood vessels that feed and surround the heart. Depression can increase the risk of a heart attack or other heart disease by over 70 percent. But when a person has a high level of social support—family and friends—the effects of depression can be reduced, the researchers say.

A Controversial Choice

In September 2000, Pope John Paul II proceeded with the beatification of Pius IX (pope, 1846-78). In the Catholic daily *La Croix*, French historian René Rémond mentioned that Pius IX made "decisions that shock an evangelical mind—such as allowing the execution of Italian patriots sentenced to death for questioning his power as head of State." Calling him the "last European absolute monarch," the newspaper *Le Monde* noted the intolerance of this pope-king and especially his fight against "freedom of conscience, hu-

man rights, and the emancipation of the Jews." The paper added that Pius IX "condemned democracy, freedom of religion, and separation of Church and State" as well as "freedom of the press, thought, and association." It was Pius IX who in 1869 opened the first Vatican council where the doctrine of papal infallibility in matters of faith and morals was defined.

Industrious Diggers



Chilean farmers have to cope with the *coruro*, a little black, furry rodent that digs tunnels in the topsoil that are as much as 2,000 feet long. Recently, a thorough study of their widely branching tunnel system was made. Two zoologists, one from the University of Essen, Germany, and her Chilean colleague, completely unearthed the home of a colony of 26 animals. In the food chambers, they found 5,000 plant bulbs, stored for the dry period. The tunnel system also included nest chambers lined with grass and plastic bags. However, as cute and impressive as the little black fellows with their prominent incisors might be, they are viewed by farmers as a nuisance. Cattle often end up with a broken leg

when they step on a tunnel and it gives way.

That Amazing Weed

—The Dandelion

Dandelions "are reviled as Public Enemy No. One by golf course superintendents and fastidious lawn owners everywhere" and as "the weed that won't go away," states *The News* of Mexico City. Yet, the dandelion "is one of the world's most healthful plants" and can contribute much to your health and diet. Rich in Vitamin A and potassium, the dandelion is more nutritious than broccoli or spinach. All its parts are useful. The young leaves can be used as greens in salads or in almost any recipe calling for spinach; the dried, roasted roots, for a coffee-like beverage; and the blossoms, for wine. Historically dandelion has been used as a liver tonic and cleanser, as a blood purifier and builder, and as a mild diuretic. The dandelion is "one of the top six herbs in the Chinese medicine chest," declares *The News*. And for people who have a lawn or access to a pasture, dandelions are free.

Andean Thaw

In the past 67 years, some glaciers in the Andes Mountains of Peru have receded by 2,800 to 5,000 feet, reports *El Comercio* newspaper of Lima. According to studies by French glaciologist Antoine Erout, in just over 20 years, the ice melt has created more than 70 new lakes—a number of which will

likely overflow and break their natural dams. The loss of the glacial ice and snow means a reduction in the fresh water utilized by farms, irrigation projects, and hydroelectric power plants. These water supplies are also the chief source of drinking water for three Latin-American capitals: Lima, Peru; Quito, Ecuador; and La Paz, Bolivia. "Can you imagine what would happen if those snow and ice deposits disappeared?" asks *El Comercio*. Erouet suggests that among the main causes of this problem are the climatic changes associated with the phenomenon El Niño.

"Sudden Wealth Syndrome"

"The number of millionaires in the United States and Canada has risen almost 40% since 1997 to 2.5 million," says Canada's *National Post* newspaper. The paper also noted that the high-tech world is making many young people very rich. According to psychologist Dr. Stephen Goldbart, though, some cannot handle their sudden wealth. "It can ruin their lives, rip their families apart and lead them on a path of destructive behaviour. Money does not always bring peace and fulfillment," Goldbart said. According to some psychologists, the high-tech world has created "a new illness—sudden wealth syndrome," which manifests itself in severe depression, panic attacks, and insomnia. As mentioned in the *Post*, "some newly rich feel guilty about having so much money and feel they are not entitled to it, or that they do not deserve it." Others become paranoid and fear that they will be

exploited. Dr. Goldbart recommends that the unhappy rich get involved in the community and not just write checks to charities.

Overuse of Antibiotics



"Repeated warnings by health officials about the overuse of antibiotics are falling on deaf ears," notes *New Scientist* magazine. "A survey of 10 000 people in nine states in the US revealed that 32 per cent still believe antibiotics can cure a cold, 27 per cent think taking antibiotics during a cold will prevent more serious illness, and 48 per cent expect a prescription for antibiotics if they see a doctor for cold symptoms." However, antibiotics do not work against *viral* infections, such as colds. They work only against *bacterial* infections. Overuse of antibiotics is considered to be a major cause of drug-resistant diseases. (See *Awake!* of December 22, 1998, page 28.) Says Brian Spratt of Oxford University: "We need to find a better way of getting across the correct message."

The Extraordinary Ice Bug

"One of the first pictures to be published of a rare and elusive 'ice bug' that inhabits the Rockies and parts of Russia is to appear in the newly compiled *Handbook of Insects*," reports *The Sunday Telegraph* of

London. This northern rock crawler survives at high altitudes on a diet of dead prey or insect parts blown about in the air. The bug is pale brown and yellow, with long antennae but no wings, and its young bear some similarity to an immature earwig. Measuring up to 1.2 inches in length, it is part of an insect order discovered less than 100 years ago. "It is so well adapted to its chilly environment that it will die of heatstroke if held in the palm of a human hand," explains the newspaper. Dr. George McGavin of Oxford University's Museum of Natural History, the author of the handbook, observes that barely a fifth of the world's insects have so far been identified.

Why Is Caffeine in Soft Drinks?

"If caffeine doesn't improve the flavour of soft drinks, what's it for?" asks *New Scientist* magazine. "Scientists at Johns Hopkins University in Baltimore found that only 2 out of 25 adult cola drinkers could distinguish between the taste of caffeinated and caffeine-free varieties." Yet, 70 percent of the 15 billion cans of carbonated drinks consumed by Americans in 1998 contained caffeine. In an earlier study, psychopharmacologist Roland Griffiths and his colleagues "found evidence of withdrawal symptoms in children denied their usual supply of caffeinated soft drinks." Claims Griffiths: "They're adding a mildly addictive drug, one which surely accounts for the fact that people drink far more sodas with caffeine than without."

FROM OUR READERS

Santeria You begin your *Awake!* article "The Lure of Santeria" (July 8, 2000) by implying that Santeria is uniquely prominent in Cuba and that it is from Cuba that Santeria has been gradually introduced into other countries. And yet buried within the article, we see that Santeria was carried to all the Caribbean islands by African slaves from Nigeria. This article was not written by a Cuban but by someone from Mexico. This is what is called yellow journalism, and it damages your credibility.

V.R., United States

We had no intention of implying that Santeria is "uniquely prominent in Cuba." On the contrary, we showed that Santeria is widely practiced in other parts of the world, including Mexico and the United States. As for the spread of Santeria, the "Encyclopædia Britannica" says that Santeria is a "religious cult that originated in Cuba and spread to neighbouring islands... It developed out of the traditions of the Yoruba people (of modern Nigeria and Benin)." —ED.

Endometriosis Thank you very, very much for the article "My Struggle With Endometriosis." (July 22, 2000) I too was diagnosed as having endometriosis and have had a very rough time. Some of my Christian brothers never understood why I was always so sick. But after reading the article, they now have a different view.

G.S., Jamaica

Reading about Deborah Andreopoulos was like reading my own life story! I have suffered for many years, and this article was an answer to my prayers. It provided much-needed encouragement.

J.C.F., Ireland

Two and a half months ago, I was diagnosed as having endometriosis. What I am most grateful for is knowing that I am not alone and that many women are going through the same thing.

A.W., Guatemala

Thank you for addressing the impact that this disease has not only on the patient but also on friends and family. Seeing your article made me feel that Jehovah really cares and understands what we are going through.

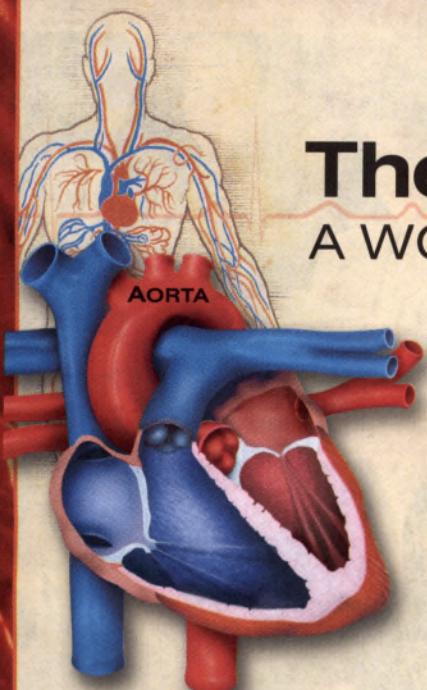
N.A., Canada

In just a few days' time, I will undergo surgery, and the experience of Deborah Andreopoulos was an encouragement to me. Now I think I can face my problem with a better spirit.

M.B., Italy

Antarctica The article "Antarctica—The Last Frontier" (July 22, 2000) was read and reread. Our *Awake!* writer in Australia and the layout artist did a magnificent job! It brought back memories of things past. During the International Geophysical Year some 45 years ago, a group of U.S. scientists were assigned to study Antarctica. It took three large bound volumes to chronicle their work. As a free-lance graphic artist, I was hired to do the layout work. Today I am one of Jehovah's Witnesses, and I am in my 16th year as a full-time evangelizer of the good news. Still, I am surrounded by Antarctica, having many photos and maps of Antarctica on display in my studio. Thanks so much for the article!

C.M., United States



The Aorta

A WONDER OF DESIGN



The aorta is a more sophisticated piece of "plumbing" than scientists previously realized. At first glance, the arch of the aorta resembles the curved handle of an umbrella. But that is not entirely correct. The arch of the aorta has, not a simple two-dimensional curve, but a three-dimensional one, like a semicircular section cut out of a coil spring. Laid on a flat surface, it would curl around *and up*.

Why this design? Because instead of simply making the blood flow around the arch like water in the bend of a river, it makes the blood swirl around the aorta in a double-spiral fashion. On the inside of a river bend, the water flows slower, allowing sediment to build up. But on the outside of the bend, the stream moves faster, even scouring away the bank. In the aorta, such a difference in speed might allow dangerous plaques to build up on the slower inside bend. By forcing the blood to flow in a spiral fashion, however, the aorta reduces this problem by causing the blood to scour its wall more evenly.

Truly, the aorta is a miracle of design! With good reason the Bible psalmist exclaimed: "In a fear-inspiring way I am wonderfully made."

—Psalm 139:14.

Blood cell background on pages 24-6, and 31: Lennart Nilsson



MILLIONS ARE GOING *WILL YOU?*

Going where? To the annual observance of the death of Jesus Christ. In the year 2000, a worldwide total of 14,872,086 attended.

Why do people go? Because of what the death of Christ means for humankind. It means imminent relief from sickness, suffering, and death. Even dead loved ones will be resurrected to life on a paradise earth.

How can the death of Jesus bring such blessings? You are invited to find out. Jehovah's Witnesses welcome you to join them for this important event.

Attend at the Kingdom Hall nearest to your home. This year the date is Sunday, April 8, after sunset. Check with the Witnesses locally for the exact time.