

Awake!



OCTOBER 22, 2003

RESISTANT GERMS

A Global Menace

Awake!

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- 3 How Great Is the Menace?
- 4 Those Resilient Germs—How They Rebound
- 8 When Germs Will Not Harm Anyone
- 16 Coping With Floods in the Caucasus
- 24 A Parasitic yet Useful Wasp
- 25 Young People Ask How Can I Come Out From Under My Parents' Shadow?
- 28 Watching the World
- 30 From Our Readers
- 31 The World's Largest Seed
- 32 Comfort at the Right Time



From the book *Gems From the Coral Islands*

Jehovah's Name in the Pacific 12

God's name, Jehovah, was commonly used in the Pacific 180 years ago. You will find the story about this fascinating.

My Foundation for a Purposeful Life 19

Read about a boy's training on the prairies of Canada and how it equipped him for missionary life in Africa.



Resistant Germs A Global Menace 3-11

Germs that survive antibiotics and other drugs have become a global menace. How did this happen? What can you do to protect yourself and your family?

How Great Is the Menace?

IN October 1997, Hollie Mullin, a three-week-old baby, contracted an ear infection. When it failed to clear up in a few days, her doctor prescribed a modern antibiotic. It should have been a routine cure, but it wasn't. The infection returned and continued to do so after each course of antibiotics.

In her first year, Hollie had *17 courses of various antibiotics*. Then, at 21 months of age, she got her worst infection. After 14 days of intravenous administration of an antibiotic of last resort, the infection finally cleared up.

Scenarios like this have become increasingly common and not just among babies and the elderly. People of all ages are getting sick and even dying from infections that were once easily cured with antibiotics. Actually, germs that survive antibiotic assault have been a serious problem in some hospitals since the 1950's. Then during the 1960's and 1970's, germs resistant to antibiotics spread into communities.

In time, medical researchers began to cite overuse of antibiotics in humans and animals as the principal cause of the increase in germs that are resistant to antibiotics. In 1978 one of these medical personnel described antibiotic overuse as "completely out of hand." So by the 1990's, headlines like the follow-

ing were appearing worldwide: "Superbugs Arrive," "Superbugs Take Hold," "Dangerous Drugs—Antibiotic Overuse Is Spawning Superbugs."

Sensationalism? Not according to respected medical organizations. In a report on infectious diseases in 2000, the director general of the World Health Organization (WHO) stated: "At the dawn of a new millennium, humanity is faced with another crisis. Formerly curable diseases . . . are now arrayed in the increasingly impenetrable armour of antimicrobial resistance."

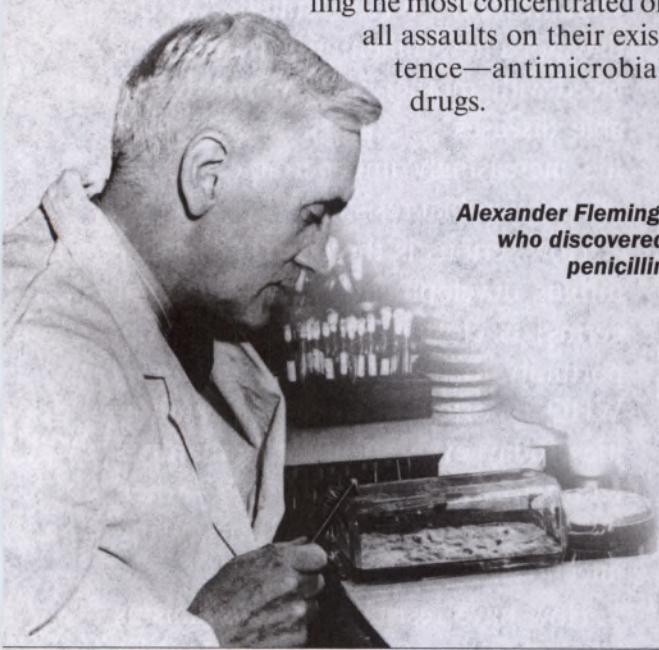
How serious is the crisis? "This disturbing development [of drug-resistant germs] is closing the windows of opportunity to treat infectious diseases," WHO reported. A number of authorities today even speak of humanity's return to a "pre-antibiotic age," when there were no antibiotics for curing infections.

How have resistant microorganisms been able, in effect, to colonize the world, outmaneuvering sophisticated scientific advances? Is there anything an individual can do to protect himself or others? And what solutions are in the offing to combat germs that are resistant to antibiotics? The following articles present some answers.

Those Resilient Germs How They Rebound

VIRUSES, bacteria, protozoans, fungi, and other microorganisms have evidently been around since life on earth began. The stunning flexibility of these germs, the simplest of all creatures, has allowed them to survive where nothing else can. They are found in scalding vents on the ocean floor as well as in the freezing waters of the Arctic. Now these germs are repelling the most concentrated of all assaults on their existence—antimicrobial drugs.

**Alexander Fleming,
who discovered
penicillin**



A hundred years ago, some microbes, or microorganisms, were known to cause illness, but no one then living had heard of antimicrobial medicines. So if a person came down with a serious infectious disease, many doctors had little to offer in the way of treatment except moral support. The person's immune system had to fight off the infection on its own. If the immune system wasn't strong enough, the consequence was often tragic. Even a minor scratch infected by a microbe all too often led to death.

Thus, the discovery of the first safe antimicrobial drugs—antibiotics—revolutionized medicine.* The medical use of sulfa drugs in the 1930's and of such drugs as penicillin and streptomycin in the 1940's led to a flood of discoveries in succeeding decades. By the 1990's, the antibiotic armory had come to include some 150 compounds in 15 different categories.

Anticipation of Victory Smashed

By the 1950's and 1960's, some people had begun to celebrate victory over infectious dis-

* "Antibiotic," as the word is commonly used, is medicine that fights bacteria. "Antimicrobial" is a more general term and includes any drug that combats disease-causing microbes, be they viruses, bacteria, fungi, or tiny parasites.

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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eases. Some microbiologists even believed that these diseases would soon be a nightmare of the past. In 1969 the U.S. surgeon general testified before Congress that humanity might soon "close the book on infectious disease." In 1972, Nobel laureate Macfarlane Burnet along with David White wrote: "The most likely forecast about the future of infectious disease is that it will be very dull." Indeed, some felt that such diseases might be eliminated altogether.

The belief that infectious diseases had, in effect, been defeated resulted in widespread overconfidence. One nurse who was familiar with the dire threat that germs posed before the introduction of antibiotics noted that some younger nurses had become lax in simple hygiene. When she reminded them to wash their hands, they would retort: "Don't worry, we have antibiotics now."

Yet, dependence on antibiotics and their overuse have had disastrous consequences. Infectious diseases have persisted. More than that, *they have roared back to become the leading cause of death in the world!* Other factors that have also contributed to the spread of infectious diseases include the chaos of warfare, widespread malnutrition in developing countries, lack of clean water, poor sanitation, rapid international travel, and global climate change.

Bacterial Resistance

The astounding resilience of everyday germs has proved a major problem, one not

generally anticipated. Yet, in hindsight, that germs would develop immunity to drugs *should* have been anticipated. Why? Consider, for example, something related that happened with the introduction of the insecticide DDT in the mid-1940's.* At that time dairy-men rejoiced as flies essentially disappeared with the spraying of DDT. But a few flies survived, and their offspring inherited immunity to DDT. Soon these flies, unaffected by DDT, multiplied in vast numbers.

Even before DDT was used, and before penicillin became commercially available in 1944, harmful bacteria gave foregleams of their prodigious defensive weaponry. Dr. Alexander Fleming, penicillin's discoverer, became aware of this. In his laboratory he watched as succeeding generations of *Staphylococcus aureus* (hospital staph) developed cell walls increasingly impervious to the drug that he had discovered.

This led Dr. Fleming to warn some 60 years ago that harmful bacteria in an infected person could develop resistance to penicillin. So if doses of penicillin did not kill sufficient numbers of the harmful bacteria, their resistant offspring would multiply. As a result, there would be a rebound of the disease that penicillin could not cure.

The book *The Antibiotic Paradox* comments: "Fleming's predictions were borne out in a more devastating way than even

* Insecticides are poisons, but so are drugs. Both have proved to be helpful as well as harmful. While antibiotic drugs may kill harmful germs, these drugs also kill beneficial bacteria.

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What Are Antimicrobials?

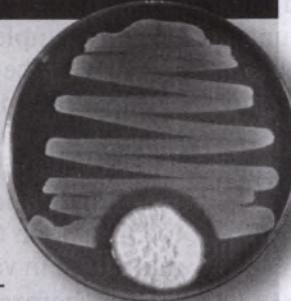
The antibiotic given you by a doctor falls into a class of medicines called antimicrobials. These come under the general heading "chemotherapy," which refers to the treatment of disease with chemicals. While the term "chemotherapy" is often used in connection with treating cancer, it originally applied—and still does—to the treatment of infectious diseases. In such cases it is called antimicrobial chemotherapy.

Microbes, or microorganisms, are tiny organisms that can be seen only with the help of a microscope. Antimicrobials are chemicals that act against microbes that cause illness. Unfortunately, antimicrobials can also act against microbes that are beneficial.

In 1941, Selman Waksman, codiscoverer of streptomycin, applied the term "antibiotic" to antibacterials that come from microorganisms. Antibiotics as well as other antimicrobials used in medical treatment are valuable because of what is called selective toxicity. This means that they can poison germs without seriously poisoning you.

Actually, however, all antibiotics are at least somewhat poisonous to us too. The margin of safety between the dosage that will affect the germs and the dosage that will harm us is called the therapeutic index. The larger the index, the safer the drug; the smaller, the more dangerous. In fact, thousands of antibiotic substances have been found, but most are not useful in medicine because of being too toxic to people or to animals.

The first natural antibiotic that could be used internally was penicillin, which came from a mold called *Penicillium notatum*. Penicillin was employed intravenously for the first time in 1941. Shortly thereafter, in 1943, streptomycin was isolated from *Streptomyces griseus*, a soil bacteria. In time, scores of additional antibiotics were developed, both those that are derived from living things and those that are made synthetically. Yet, bacteria have developed ways of resisting many of these antibiotics, causing a global medical problem.



The penicillin mold colony seen at the bottom of the dish inhibits the growth of the bacteria

Christine L. Case/Skyline College

he surmised." How so? Well, it was learned that in some strains of bacteria, the genes—the tiny blueprints in a bacterium's DNA—produce enzymes that make penicillin ineffective. As a result, even extensive courses of penicillin often prove useless. What a shock this was!

In an attempt to win the battle against infectious diseases, new antibiotics were regularly introduced into medicine from the 1940's through the 1970's, as well as a few during the 1980's and the 1990's. These could treat bacteria that defied earlier drugs. But within a few years, strains of bacteria surfaced that defied these new drugs as well.

Humans have come to learn that bacterial resistance is astonishingly ingenious. Bacteria have the ability to change their cell wall to keep the antibiotic out or to alter their own chemistry so that the antibiotic cannot kill them. On the other hand, the bacteria may pump the antibiotic out as fast as it enters, or the bacteria may simply render the antibiotic ineffectual by taking it apart.

As the use of antibiotics has increased, resistant strains of bacteria have multiplied and spread. A total disaster? No, at least not in most cases. If one antibiotic doesn't work for a particular infection, another usually does. Resistance has been a nuisance, but until recently it has usually been manageable.

Multidrug Resistance

Then, to their horror, medical scientists learned that bacteria exchange genes among themselves. At first it was thought that only bacteria of the same type could exchange

genes. But later the very same resistance genes were discovered in completely different types of bacteria. By means of such exchanges, bacteria of various types have accumulated resistance to many different commonly used drugs.

As if all of this were not enough, studies in the 1990's showed that some bacteria can become drug resistant on their own. Even in the presence of only one antibiotic, some kinds of bacteria develop resistance to multiple antibiotics, both natural and synthetic.

A Foreboding Future

Although most antibiotics today still work in the majority of people, how effective will such drugs be in the future? *The Antibiotic Paradox* observes: "We can no longer expect that any infection will be cured by the first

antibiotic chosen." The book adds: "In some parts of the world, limited supplies of antibiotics mean that *no* available antibiotic is effective. . . . Patients are suffering and dying from diseases that some predicted 50 years ago would be wiped off the face of the earth."

Bacteria are not the only germs that have become resistant to drugs used in medicine. Viruses as well as fungi and other tiny parasites have also shown amazing adaptability, offering the world strains that threaten to nullify all the efforts invested to discover and produce the drugs that fight them.

What, then, can be done? Can resistance be eliminated or at least contained? How can the victories won by antibiotics and other antimicrobials be preserved in a world increasingly beset by infectious diseases?

Kinds of Germs

Viruses are the tiniest germs. They are the cause of common illnesses such as colds, flu, and sore throats. Viruses also cause terrible diseases such as polio, Ebola, and AIDS.

Bacteria are one-celled organisms so simple that they lack a nucleus and generally have only one chromosome. Bacteria inhabit our bodies by the trillions, mostly in our digestive tract. They help us to digest our food and are the primary source of vitamin K, necessary for the clotting of blood.

Only about 300 out of some 4,600 listed species of bacteria are considered pathogens (disease causing). Still, bacteria are the source of a long list of diseases in plants, animals, and humans. In humans these diseases include tuberculosis, cholera, diphtheria, anthrax, tooth decay, certain kinds

of pneumonia, and a number of sexually transmitted diseases.

Protozoans, like bacteria, are single-celled organisms, but they may have more than one nucleus. Included are amoebas and trypanosomes as well as the parasite that causes malaria. About one third of living species are parasites—there are some 10,000 different kinds—although only a few of these parasites cause disease in humans.

Fungi too can cause illness. These organisms have a nucleus and form tangled mats of filaments. The most common infections are ringworm, such as athlete's foot, and candidiasis (*Candida*). Serious fungal infections usually afflict only people whose defenses have been weakened by malnutrition, cancer, drugs, or viral infections that suppress the immune system.

Ebola virus

CDC/C. Goldsmith

"Staphylococcus aureus" bacteria

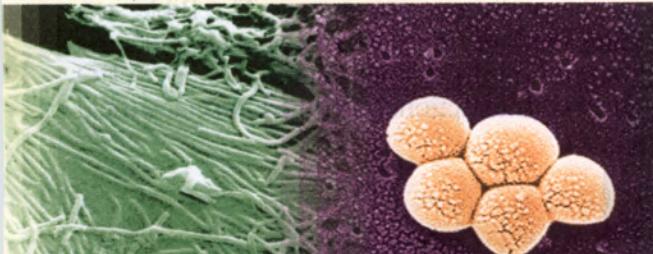
CDC/Janice Carr

"Giardia lamblia" protozoan

Courtesy Dr. Arturo González Robles,
CINVESTAV, I.P.N. México

Ringworm fungus

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When Germs Will Not Harm Anyone

GERMS, or microorganisms, are essential to life. They make up a considerable portion of earth's soil and of our own bodies. As the box "Kinds of Germs," on page 7, notes, "bacteria inhabit our bodies by the trillions." Most of these are beneficial—in fact, vital—to health. Although only relatively few cause disease, we can be confident that, in time, no germs will harm anyone.

Before we examine the means by which all harmful effects of germs will be eliminated, let's consider current efforts to combat disease-causing germs. Besides examining the accompanying box "What You Can Do," consider the efforts of health professionals to combat resistant germs.

Global Strategies

Dr. Gro Harlem Brundtland, the former director general of the World Health Organization (WHO), described efforts being made. In the *Report on Infectious Diseases 2000*, "Overcoming Antimicrobial Resistance," she pointed to a need to develop "a global strategy to contain resistance" of germs. She also spoke of building "alliances involving all healthcare providers," emphasizing: "We have an opportunity to launch a massive effort against infectious diseases."

In 2001, WHO proposed a "Global Strategy for Containment of Antimicrobial Resistance." This document presented a plan directed to health-care providers and people in general regarding "what to do and how to do it." The strategy included educating people on how to avoid getting sick, as well as providing instruction to them on how to use antibiotics

and other antimicrobials when they get an infection.

In addition, health-care workers—doctors and nurses as well as others working in hospitals and nursing homes—were urged to take better measures to avoid the spread of infection. Sadly, studies have revealed that many health professionals still neglect to wash their hands or change gloves between patients.

Surveys have also shown that doctors prescribe antibiotics when they shouldn't. One reason for this is that people pressure their doctor to give an antibiotic as a quick cure. So doctors comply, simply to please patients. Often doctors neither take the time to educate their patients nor have the means available to identify the infecting germ. Also, they may prescribe newer but more expensive broad-spectrum antibiotics. And this too contributes to the drug-resistance problem.

Other areas addressed in WHO's Global Strategy are hospitals, national health systems, food producers, pharmaceutical companies, and lawmakers. The report encourages cooperation among all of them in order to combat the global menace of drug-resistant germs. But will such a program work?

Obstacles to Success

The WHO Global Strategy alluded to a major obstacle to solving health problems. It is the profit motive—money. The Bible says that the love of it is responsible for "all sorts of injurious things." (1 Timothy 6:9, 10) WHO urges: "Interactions with the pharmaceutical

industry must also be considered, including appropriate control of the access of sales representatives to clinical staff and monitoring industry-sponsored educational programmes for providers."

Drug companies have aggressively presented their products to doctors. Now they do so directly to the public through TV advertising. This has evidently contributed to the over-use of drugs, which, in turn, has been a major factor in the proliferation of drug-resistant germs.

In its chapter on the use of antimicrobials in food-producing animals, the WHO Global Strategy states: "Veterinarians in some coun-

tries earn as much as 40% or more of their income by the sale of drugs, so there is a disincentive to limit antimicrobial use." As is well documented, resistant germs have emerged and flourished because of the inordinate use of antibiotics.

The production of antibiotics is, in fact, astounding. In the United States alone, some 50 million pounds of antibiotics are produced annually! Of the world's total production, only about half is used for people. The rest is either sprayed on crops or fed to animals. Antibiotics are commonly mixed with the feed of animals raised for food to speed their growth.

What You Can Do

What can you do to minimize the threat of resistant germs? The World Health Organization has provided some guidelines. First, it outlined measures we can take to reduce disease and the spread of infection. Second, it described how people can improve their use of antimicrobials.

Logically, the best way to reduce disease and its spread is to do whatever is necessary to keep healthy. What can you do to avoid getting sick?

Measures to Avoid Getting Sick

1. Do your best to obtain the following three things: proper nutrition, sufficient exercise, and adequate rest.

2. Practice personal hygiene. Authorities emphasize hand washing as the single most effective procedure to avoid getting ill and to keep from passing infection on to others.

3. Ensure the safety of the food you and your family eat. Be especially conscious that your hands as well as the area where meals are prepared are clean. Also, be sure that the water used to wash your hands and food is clean. Since germs flourish in food, cook meats thoroughly. Store and chill food properly.

4. In lands where serious disease is transmitted by flying insects, limit your nighttime or early-morning outdoor activity when these insects are most active. And regularly use protective netting.

5. Vaccines can help train your immune system to fight off some germs that are common where you live.

Use of Antimicrobials

1. Consult a health professional before buying or taking any antibiotic or antimicrobial. Direct-to-consumer promotions often benefit the seller more than the buyer.

2. Don't press your doctor for an antibiotic prescription. If you do, he may give you one only because he fears losing you as a patient. Colds, for example, are caused by viruses, and antibiotics do not cure colds. Taking an antibiotic when you have a virus may suppress helpful bacteria, perhaps allowing resistant ones to breed.

3. Don't insist on the latest medicine—it may not be the best for you and may cost you far more than is necessary.

4. Learn about any medication from a reliable source: What is it for? What are the possible side effects? What are its drug interactions and other factors that might make ingesting it dangerous?

5. If the antibiotic medication is truly appropriate, you are generally encouraged to take the full course that is prescribed, even if you feel better before you finish taking it all. The last portion helps ensure that all of the infection is gone.

The Role of Governments

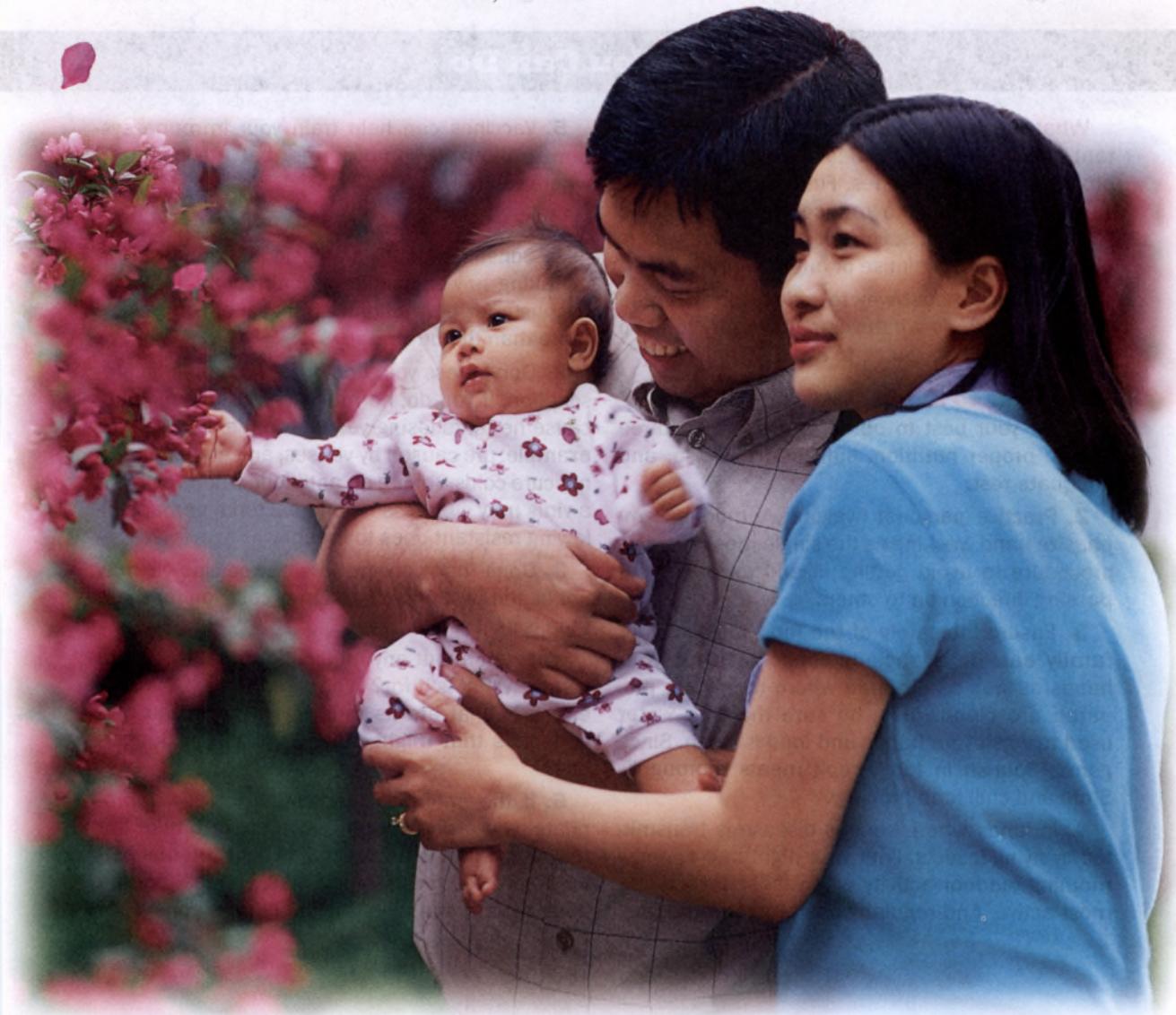
Significantly, the Executive Summary of the WHO Global Strategy states: "Much of the responsibility for implementation of the strategy will fall on individual countries. Governments have a critical role to play."

To be sure, a number of governments have developed programs to contain antimicrobial resistance, with emphasis on collaboration inside and outside their national boundaries. These programs include better tracking of antimicrobial use and resistant microbes, improved infection control, appropriate use of antimicrobials in medicine and agriculture, research to understand resistance, and de-

velopment of new medicines. WHO's *Report on Infectious Diseases 2000* was not optimistic. Why?

The report pointed to "a lack of political will on the part of governments whose priorities may not be public health." It added: "Disease—and therefore resistance—also thrives in conditions of civil unrest, poverty, mass migration and environmental degradation where large numbers of people are exposed to infectious diseases." Unfortunately,

Under God's righteous government, people will enjoy life without any germs that cause harm



these very problems are ones that human governments have never been able to solve.

However, the Bible tells of a government that will not only solve the problems that spawn disease but also eliminate sickness altogether. You may think that some germs will always cause harm, but there are good reasons to believe that the future will be far better than that.

When No Germ Will Cause Harm

The Bible prophet Isaiah long ago pointed to a superhuman government and identified its ruler. Note the prophecy, as it appears in the King James version of the Bible: “For unto us a child is born, unto us a son is given: and *the government shall be upon his shoulder: and his name shall be called Wonderful, Counselor, The mighty God, The everlasting Father, The Prince of Peace.*”—Isaiah 9:6, italics ours.

Who is this child, this prince, who would receive rulership? Note how he was identified even before his birth. The angel Gabriel told the virgin girl Mary: “Look! you will conceive in your womb and give birth to a son, and you are to call his name Jesus. This one will be great . . . , and there will be no end of *his kingdom.*”—Luke 1:31-33.

When Jesus reached physical maturity, he provided evidence that he was indeed the promised Ruler of God’s Kingdom government. Not only did Jesus go through the land proclaiming “the good news of the kingdom” but he also demonstrated his power to eliminate all sickness and disease. The Bible reports that “great crowds approached him, having along with them people that were lame, maimed, blind, dumb, and many otherwise, and they fairly threw them at his feet, *and he cured them;* so that the crowd felt amazement as they saw the dumb speaking and the lame walking and the blind seeing.”—Matthew 9:35; 15:30, 31.

Yes, whatever the disease or infirmity a person suffered, Jesus cured it. He even raised

to life several people who had died! (Luke 7:11-17; 8:49-56; John 11:38-44) True, those who were healed, and even those resurrected, eventually died. Still, Jesus’ miracles showed what he will do in the future for people who live on earth under Kingdom rule. The Bible promises that at that time “no resident will say: ‘I am sick.’”—Isaiah 33:24; Revelation 21:3, 4.

Today, as we are all painfully aware, everyone is subject to sickness and death. Germs harm millions, often proving fatal. Yet, the human body is so marvelously designed that some wonder why anybody gets sick. Medical doctor Lewis Thomas wrote of the vital role of bacteria and observed that illness comes about “like an accident.” He said: “It may be that the defense mechanisms of affected patients are flawed in some special way.”

Indeed, those with strong immune systems rarely, if ever, suffer from bacterial infection. Nonetheless, eventually people succumb to old age and death. The Bible says that sin inherited from the originally perfect first human, Adam, is the flaw responsible for sickness and death. “Through one man,” the Bible explains, “sin entered into the world and death through sin, and thus death spread to all men because they had all sinned.”—Romans 5:12.

God, however, sent his Son to earth to provide his perfect life as a ransom to release humans from the effects of sin. (Matthew 20:28) The Bible explains: “The wages sin pays is death, but the gift God gives is everlasting life by Christ Jesus our Lord.” (Romans 6:23; 1 John 5:11) Under the rule of God’s Kingdom, the healing effects of Christ’s ransom sacrifice will be realized. Then all germs, even those that now cause disease, will do no harm to anyone.

Does it not make sense to learn about the Kingdom government promised in the Bible, which will provide solutions to mankind’s problems? Jehovah’s Witnesses would be delighted to help you learn more.

JEHOVAH'S NAME IN THE *Pacific*



**BY AWAKE!
WRITER
IN FIJI**

THE crowd was totally amazed. Newcomers to their Pacific island closed their eyes before eating the feast that had been prepared for them. "What are you doing?" the islanders asked.

"Thanking God for His gifts," was the reply.

"Where does your God live?" the islanders wanted to know.

"In heaven," they were told.

"What is His name?"

"Jehovah."

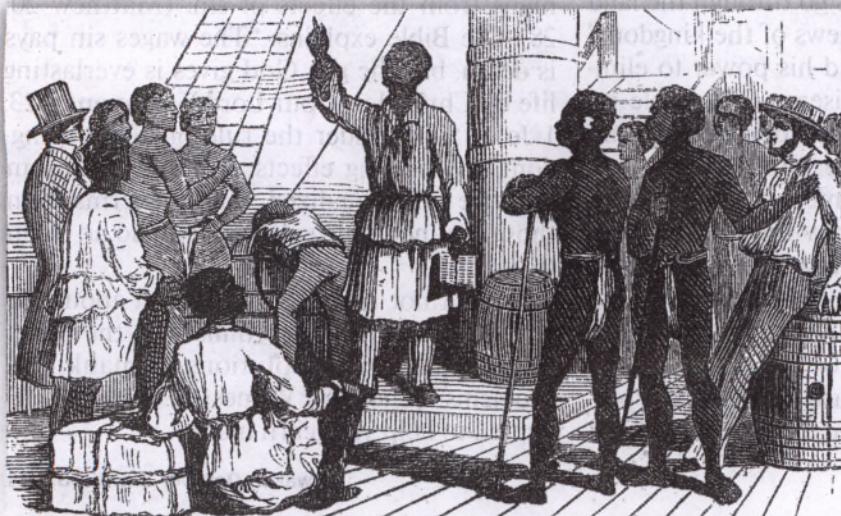
"Does your God eat food?" the islanders asked.

"God is a Spirit," the newcomers replied. "He is not like us; He lives for ever. It was He that made the earth, the sky, the sea, and all things. He made us."

The islanders were astounded at these simple truths and asked why these strangers were visiting their island. The reply was simple: "We come to make known to you the true God Jehovah, and His Son Jesus our Saviour."—*From Darkness to Light in Polynesia*.

Who were these strangers? Present-day Witnesses of Jehovah? No. They were two Tahitian teachers, evangelizers, who arrived at the island of Manガia (in the southern Cook Islands) on June 15, 1824. Why did they use the

name Jehovah? Was this simply an isolated event? The answer to these questions explains why Jehovah's



Pacific islanders who learned God's name from early missionaries from Christendom made it known to others

Palm tree and photo at left: From the book *Gems From the Coral Islands*

name is still very important in many Pacific-island cultures.

God's Name Used Extensively

Many missionaries who came to the Pacific from England and America in the 19th century used the name Jehovah in everyday speech and in their writings. In fact, one historian even mistakenly asserted that these early missionaries "were followers of Jehovah rather than disciples of Christ."

Personal letters of these missionaries often started with a phrase such as: "May you be saved by God even Our Lord Jehovah and by Jesus Christ the king of peace." Not surprisingly, therefore, Albert J. Schütz, a well-known linguist, says that in Fiji a primer produced in 1825 contained only one word borrowed from English. It was the name *Jehova*.

This use of Jehovah's name by the early missionaries had a profound effect on Pacific islanders. Some of these taught ones were, in turn, sent out as missionaries, or teachers, to take their message to other islands. Commenting on the above-mentioned arrival of the two Tahitian missionaries on the island of Mangaia, the book *The Covenant Makers—Islander Missionaries in the Pacific* makes this comment: "For the Tahitian teachers, Jehovah was the only true God. He created the whole world and man was part of God's creation. . . . [They] claimed that Jehovah was the only true God and His Son Jesus Christ was the Saviour of mankind."

As they took the Bible's message to various islands, some early missionaries encountered incredible dangers, since the inhabitants at times were violent. In describing the difficulties

involved, the book *Mission, Church, and Sect in Oceania* states: "Strong faith in Jehovah often overcame fear and despair."

A notable example of such faith in Jehovah was shown in 1823 when the Bible's message was introduced to the island of Rarotonga, in the Cook Islands. Missionary sailor John Williams arrived there and sent two couples ashore to teach the Rarotongans. However, after a disagreement with an extremely drunk king, these missionaries were badly beaten. All their property was stolen, and they barely managed to escape with their lives.

Back on their ship, the missionaries described the Rarotongans as the fiercest savages they had ever met. Fearing the worst, Williams decided to abandon the island, at least for a while. At that, a young teacher by the name of Papeiha volunteered to attempt to evangelize the island alone. "Whether the savages spare me or kill me," he said, "I will land among them."

In words that have often been quoted in accounts of early missionary activity, Papeiha said: "*Ko Jehova toku tiaki! Tei roto au i tona rima!*" (Jehovah is my shepherd! I am in His hand!) Then, clad only in light clothing and with a book containing passages of the Bible in Tahitian, he jumped overboard and swam ashore. He more than survived. Upon arriving at the island, he found that many there responded to the things he was teaching.

One Rarotongan who later became a missionary himself was More Ta'unga. In 1842 he became the first missionary to establish a base on the island of New Caledonia. Regarding a local man whom he had taken aside and taught to read and write, he wrote in his diary: "He learnt these things slowly. Not long afterwards he said to me, 'I want to pray.' But I advised him not to be in a hurry. Later he asked again, 'Won't you let me pray?' Then he asked me why I would not agree



John
Williams
Culver Pictures



Papeiha

Courtesy Institute of Pacific Studies,
from *Mission Life in the Islands
of the Pacific*, by Aaron Buzzacott

to his praying, so I said, 'You must relinquish your idols first, then you may pray to Jehovah. He alone can hear you.' So he brought me his basket of gods, saying, 'Burn them. Now Jehovah will be my God.' He became skilled in prayer."

Pacific Islanders Accept Jehovah

With missionaries freely using God's name, it is not surprising that those to whom they preached started to accept Jehovah as their God. The book *Missionary Adventures in the South Pacific* describes a large meeting held on one northern Pacific island after the arrival of the missionary ship *Morning Star*. The book said that islanders "voted by a show of hands, most of them raising both hands and keeping them up a long time for emphasis, that they would forsake idolatry and worship Jehovah. Moreover, they would provide for all the needs of the teachers. A piece of land was set aside and dedicated to Jehovah for a church and parsonage."

Describing the conversion of Malietoa, a high chief in Samoa, the book *Wiliamu—Mariner-Missionary—The Story of John Williams* says: "Malietoa made a long speech to his people, publicly promising to become a worshipper of Jehovah, and to erect a church for His worship. He ordered the people who were remaining at home to begin to learn about Jehovah and Jesus Christ."

All this activity had a lasting impact on the lives of many Pacific-island communities. Even today in countries such as Fiji and Samoa, it is not uncommon to hear Jehovah's

name mentioned on the radio or to see it in local newspapers.

But the impact does not stop there. In her book *Treasure Islands*, first published in 1977, Pearl Binder describes the importance of Jehovah's name to the Banabans. These people originally lived in Kiribati but were later resettled on the island of Rabi, in Fiji. Binder writes: "The missionaries who came to Banaba had given the Banabans more than they knew. . . . Their belief in Jehovah has been the central core of their lives, has held them together as nothing else could have done, through seventy years of increasingly agonising tribulations, and still today keeps them alive in spirit. Without the white man's Jehovah (whom the white man himself increasingly disregards) the Banabans would have been lost."

God's Name in Bible Translations

One of the main aims of the early missionaries was to produce understandable translations of the Bible in Pacific-island languages. Because of their diligent efforts, the Bible became available in many of the languages spoken throughout the Pacific region. It seemed natural to these translators to transliterate Jehovah's name, just as they transliterated all other names in the Bible.

It is of interest to the serious Bible student that these early translators used Jehovah's name not only in their translations of the Hebrew Scriptures but also in the Christian Greek Scriptures, the so-called New Testament. A survey of seven Pacific-island languages reveals that Jehovah's name is used in 72 different verses in the Christian Greek Scriptures. These were not exclusively translations made in the 19th century. Included also is a modern translation in the Rotuman language that was released in 1999. This Bible uses Jehovah's name in 48 verses in the Christian Greek Scriptures.

At the end of the 19th century, William Wyatt Gill, a long-time missionary in the

In Our Next Issue

- Oil—Will It Ever Run Out?
- The Mighty Amazon—A Lifeline for Millions
- Prague—Come Visit Our Historic Jewel

Pacific, wrote concerning one of the early translations: "Having used the Rarotongan Bible for forty-two years, I may be pardoned for saying that I regard it as an admirable rendering of the original. . . . As in all other Pacific and New Guinea versions, the sacred name 'Jehovah' is transliterated, never translated, thus adding immeasurably to the force of the contrast between the ever-living God and the objects worshipped by the heathen."

Why They Used God's Name

Why did these missionaries, Bible translators, and teachers use God's personal name, Jehovah, so extensively? Particularly because they found it necessary to distinguish between Jehovah, the only true God, and the multitude of false gods worshiped by Pacific islanders. (John 17:3; 1 Corinthians 8:5, 6) Each of these gods had a name, and it was only natural for their worshipers to ask, "Who is your God? What is his name?" Using the local term for "god" would have confused those asking or perhaps resulted in their simply thinking of the Almighty as yet another god to add to their pantheon of gods. So it should be no wonder that these early missionaries used Jehovah's name extensively.

Does this mean that all those who use the name Jehovah really understand who he is? No. Hiram Bingham, a missionary translator and son of the famous Hawaiian missionary of the same name, witnessed the inhabitants of Abaiang (in Kiribati) shouting "there is only one God—Jehovah" while they destroyed their idol. But *Missionary Adventures in the South Pacific* says of this incident:

"Bingham knew, however, that the fall of that idol did not mean that the people were really embracing Christianity—at least not yet. They had not grasped much of the true significance of the gospel message, but a beginning

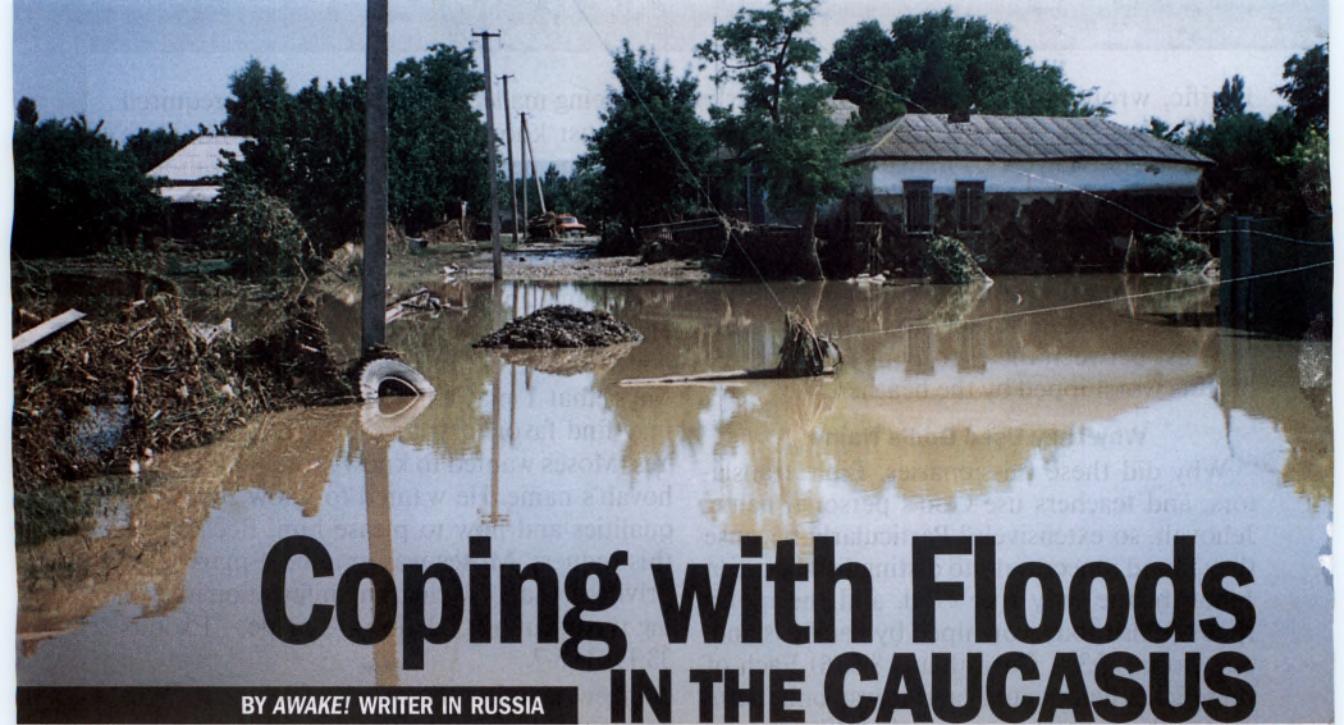
was being made." Obviously, more is required than just knowing the name Jehovah. True Christians need to get to know Jehovah as a person and obey him in every respect.—Romans 10:13-17.

Even faithful Moses, a man who knew Jehovah's name and used it, needed to know more. He prayed: "Now, if, please, I have found favor in your eyes, make me know, please, your ways, that I may know you, in order that I may find favor in your eyes." (Exodus 33:13) Yes, Moses wanted to know more than just Jehovah's name. He wanted to know Jehovah's qualities and how to please him. Because of this request, Moses was granted a marvelous privilege, that of seeing a manifestation involving the meaning of Jehovah's name.—Exodus 33:19; 34:5-7.

Likewise today, thousands of Jehovah's Witnesses throughout the Pacific region are using the Bibles originally translated by early missionaries to help honesthearted ones come to understand not only the meaning of Jehovah's name but also what he requires of those who would worship him "with spirit and truth." (John 4:23, 24) Yes, Jehovah's name is being glorified in "the islands of the sea." Many thousands are therefore putting their hope in his majestic name.—Isaiah 24:15; 42:12; 51:5; Proverbs 18:10.

Jehovah's Witnesses make God's name known around the world





Coping with Floods IN THE CAUCASUS

BY AWAKE! WRITER IN RUSSIA

LAST year in Russia's northern Caucasus region, the amount of rain that normally falls in a three-month period fell in just two days. Dozens of rivers overflowed their banks. Even small streams became raging torrents, washing away everything in their path. Dams broke, and houses and other structures were demol-

ished. Suddenly, thousands of residents were homeless. Many who could not get out of their homes fast enough perished. Others stood by helpless as loved ones were washed away in the raging waters.

In the city of Nevinnomyssk, a family tried to escape on their tractor. However, a wall of water overturned the tractor, and the whole family perished. Some died trying to save others. According to official estimates, 335,000 people were affected by the floods. Of them, more than 200 died and many were unaccounted for.

Tens of thousands of homes were inundated. Water lines and sewer systems were destroyed. Even buried bodies were exposed by the raging waters, including those of animals that had died from anthrax. Estimates of flood damage amounted to some 16 thousand million rubles, or about 500 million U.S. dollars.

This beautiful and fertile land, often the subject of song and poetry, was a heartrending sight! Yet, the disaster did not destroy true neighbor love.

Aid Provided Quickly

At first, there was no clean water, no electricity, no gas, no telephone communication. People lost track of one another. Over 3,000 of Jehovah's Witnesses live in the affected area, more than 700 in and near Ne-





vinnomyssk. So as soon as reports of flooding were heard, the Witnesses formed special emergency committees to care for those affected. These committees were in action even before state rescue workers arrived.

In the little town of Orbelyanovka, about 40 miles southeast of Nevinnomysk, the water rose rapidly. Eight people, including two female Witnesses, took refuge on the summit of a small hill. But so did small animals and many snakes. As a result, throughout the long night, the eight people had to beat away the snakes.

By the next morning, the local Witnesses were looking for ways to reach their two stranded Christian sisters. Finally, by early afternoon, a small rubber dinghy was located. But before rescuing the sisters, the Witnesses used the dinghy to take an elderly paralyzed man to safety. Afterward, as they were taking the sisters to safety, a helicopter appeared and picked up the other people stranded on the hill.

Later that day the Witnesses in the dinghy rescued still others. When the Witnesses asked, "Do you know who we are?" the people answered: "The

Witnesses bought this portable kitchen and prepared meals for the needy

Ministry of Emergency Situations, of course." They were surprised to learn otherwise.

The Witnesses in Nevinnomysk purchased a portable kitchen and prepared hot meals for those in need. They delivered not only food but also water, clothing, and medicine. Teams of Witness volunteers also cleaned up homes and cleared debris from yards.

A Witness couple in Zelenokumsk who own a business used their vehicle to transport water, food, and clothing, which they purchased at a wholesale market. When the wife's acquaintances asked whom her purchases were for, she explained that they were for fellow believers who had been hit by the disaster. Moved by her caring attitude, they also wanted to help. One businesswoman offered a sack of noodles, another gave a large package of soap, and others provided sacks of sugar.

Aid From Faraway Places

Since many Witnesses in Russia wanted to know how they could help flood victims, a special fund was set up for sending aid to those in need. Even volunteer workers at the Administrative Center of Jehovah's Witnesses in Russia, located near St. Petersburg, helped. Some bought new items for the flood victims. One explained: "I have given my very best things because I have something, but our brothers and sisters have nothing."

The Administrative Center also sent letters to some 150 congregations of Jehovah's Witnesses in St. Petersburg and Moscow, explaining how the brothers



This Witness used the family vehicle to deliver food and supplies



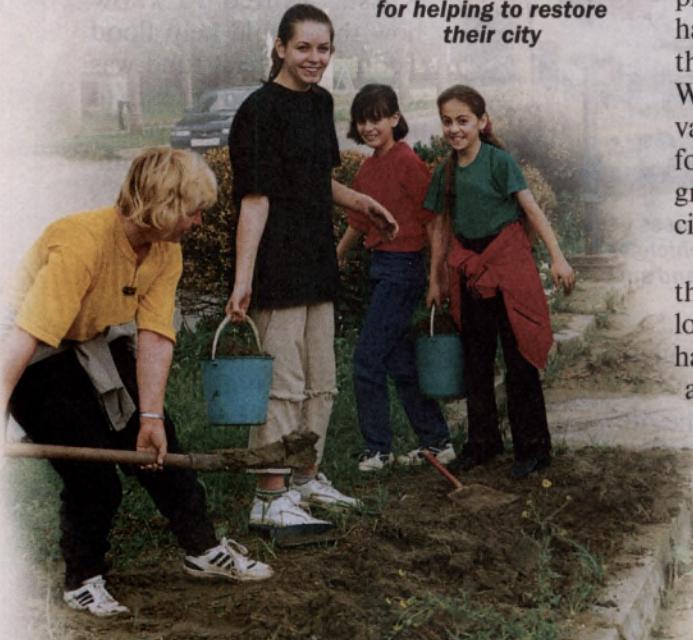
could donate money, food, and clothing. Although the economic situation in Russia leaves much to be desired and most Witnesses have little materially, their donations were generous. It was reminiscent of the giving of the poverty-stricken Macedonian Christians to their needy brothers and sisters in Judea.—2 Corinthians 8:1-4.

After the donated items had been sorted at central collection points, they were loaded onto trucks and taken to the disaster area. Besides these donated items, the Administrative Center purchased ten tons of food, 500 sets of bed sheets, and hygiene products, as well as tools and work clothes for cleaning up after the disaster. In all, six 50-ton trucks carried relief supplies to the northern Caucasus region.

Generosity Provided a Witness

The work of the Witnesses during the cleanup of the disaster zone did not go unnoticed. Consider the situation in the beautiful resort city of Kislovodsk, where there are over 300 Witnesses. They offered their services to the city administration and were given an area to clean.

**Officials of Kislovodsk
commended the Witnesses
for helping to restore
their city**



On June 28 at 8:00 a.m., about 150 Witnesses, including whole families, brought their tools and assembled for work. Some had taken unpaid vacation time from their places of employment to share in the cleanup. Shortly, a car drove up, and the first vice-mayor got out. "Who are these people?" he asked.

"They are Jehovah's Witnesses," he was told. "They have come to clean up the city after the disaster."

Surprised at seeing so many people, the vice-mayor said, "Good for them! Thank you! This is great!"

Later, just before lunch, another city official drove by in her car. She stopped, got out, and approached the Witnesses. "We have been observing your work, and we are just amazed," she said. "We have never seen people work like you do. You have done so much already!"

About the same time, an elderly woman walking by stopped and asked, "Why are these people working so hard?" When she was told that Jehovah's Witnesses were helping the city, tears welled up in her eyes. "You are true believers," she said. "People's true colors come out when disaster strikes." Another woman said: "What a wonderful thing to do! I haven't seen that in a long time."

The next day the local newspaper *Na Vodakh* praised Jehovah's Witnesses, saying that they had removed more than 100 tons of silt from the city. City officials of Kislovodsk wrote the Witnesses a letter of thanks, saying: "Your invaluable contribution restored the city to its former beauty . . . Undoubtedly, the words of gratitude from the numerous visitors to our city will be your finest reward."

Although the natural disaster that struck the northern Caucasus region caused much loss and turmoil, Jehovah's Witnesses were happy to show love to their fellow believers and to their neighbors. It especially brought

joy to them because they know that such demonstrations of love bring glory to Jehovah, our Creator.

MY FOUNDATION FOR A PURPOSEFUL LIFE

AS TOLD BY ERNEST PANDACHUK

*I was born on the prairies of Saskatchewan, Canada.
When I was 23 years old, I went to Africa, where for 35 years
I led a fascinating life as a missionary. How did my life
unfold in this way? Not by chance. Let me explain.*

MY FIRST home was made of poles, clay, and grass—barely adequate to protect our family from the harsh prairie winters. In 1928, before most of us nine children were born, Father and Mother accepted Bible literature from a visitor to our homestead. During the long winter that followed, they studied the Bible with the aid of these publications. By the following spring, they were convinced that they had found the truth. They spoke about it to family, friends, and neighbors but especially to their children.

I was born in 1931, and my five younger siblings arrived shortly thereafter. Reading and studying the Bible was part of our family routine. I recall fondly our mornings together. Father would take the lead in discussing a Bible text with us, even when we had visitors. Mother and Father, as well as the older children, took turns reading aloud from Bible-based publications.

Besides teaching us to read and write, Father also taught us to do research by using Bible concordances. Soon we learned how to use the Bible to explain our beliefs to others. These enjoyable discussions helped me to reason on Bible subjects. In time, I could use the Bible to refute false religious teachings. I could prove that the soul dies, that there is no hellfire, and that God and Jesus are not equal or part of a so-called Trinity.—Ecclesiastes 9:5, 10; Ezekiel 18:4; John 14:28.

Father and Mother also taught by example and encouraged us to stand firm for what was right, even if it meant being unpopular. For instance, they never used tobacco, and they warned us of its defiling effects and of the pressure we would encounter at school to use it. I remember Father's words: "You may be called a sissy if you refuse to smoke. But just



**Our family of nine
children in 1949,
with Mom holding
the youngest. I'm
standing behind her**





*I built this "caboose"
for use in my ministry*



**Women in Quebec who were
arrested for preaching**

ask the person, 'Who is the manly one? The one controlled by the weed or the one who controls the weed?"'

Another test of whether I would abide by my Bible-based childhood training came when I was 11. By then World War II had begun, and children at school were expected to pledge allegiance to the flag. I realized from my study of the Bible that such a pledge was an act of worship, so I refused to participate. This led to my being expelled from school for six months.

Nevertheless, in time I completed school, and in March 1947, I symbolized my dedication to Jehovah God by water baptism. Six months later I became a pioneer, a full-time proclaimer of the good news. I first served in southern Saskatchewan, witnessing to farmers and ranchers in this vast territory. In summer I traveled by horseback, and in the cold winter, I used a horse-drawn covered sleigh, which we called a caboose. It was heated by a charcoal burner, so I had to be careful not to tip the sleigh over.

The rural people were friendly and hospitable. When I called late in the afternoon, they often invited me to stay overnight. How I cherished the lively Bible discussions that ensued! The Petersons were one family who responded after an all-night discussion. Earl and his mother became zealous Witnesses of Jehovah.

Serving in Quebec

In 1949, I answered the call for pioneers to help with the preaching work in the province of Quebec. Some 200 pioneers from western Canada responded. They arrived in the city of Montreal in September, ready to accept assignments throughout Quebec. This was during the time that the Catholic Premier Maurice Duplessis, who vowed to rid the province of the Witnesses, was in office.

Those were busy and exciting times filled with challenges. These included learning the French language as well as facing arrest and mob action and the disruption of our Christian assemblies by fanatic intruders. Such intolerance, however, did not intimidate me or cause me to waver in my career as a minister of God. My parents had instilled in me a love for what is right and a conviction that the worldwide preaching work that Jesus had foretold would be accomplished, regardless of the opposition.—Matthew 24:9, 14.

During my time in Quebec, I met Emily Hawrysh, a faithful pioneer from Saskatchewan. Since our wedding on January 27, 1951, Emily has been my loyal coworker and encouraging companion. Because our goal was to share more fully in the ministry, we applied for and were accepted as students of the Watchtower Bible School of Gilead, which provides a course several months in length to prepare ministers for missionary service.

We graduated from the 20th class of Gilead in February 1953.

While we waited for documents permitting us to enter Africa, we were invited to assist congregations of Jehovah's Witnesses in Alberta and Ontario, Canada. In those days we traveled from congregation to congregation by public transportation. So we learned to simplify our lives and to carry all our belongings in a suitcase. A few months later, when our travel and entry documents were in order, we were off to Southern Rhodesia, now called Zimbabwe.

Adjusting to Life in Africa

Within five months of our arrival, we were assigned to visit groups of Jehovah's Witnesses in Zimbabwe as well as in Botswana and southern parts of Northern Rhodesia (now Zambia). At Gilead School we had been encouraged not to compare our foreign assignment with our native land and to remember that whatever the circumstance we found ourselves in, we could learn something from our experiences. Such words of wisdom helped to adjust our thinking. To this day, Emily and I agree with the saying, "Make the best of every situation; it may never happen again."

We traveled from place to place by train, bus, truck, or bicycle—whatever was available to us. Strenuous as this was, there were other circumstances that tested our resolve to "make the best of every situation." For the first two years, Emily was prevented from traveling into tribal territories with me because of legal restrictions. Thus, my wife of only a few years had to remain in towns close to the railhead, where often there were no other Witnesses. Emily's faith, courage, and tenacity not only filled me with admiration and love for her but also brought Kingdom fruitage to these communities.

Immediately after finding accommodations with one of the local inhabitants, Emily would witness in the vicinity until my return from the tribal area. At times, she served alone for

a month. She found strength and protection in relying on Jehovah's mighty hand, and her ministry bore fruit. In one instance Rita Hancock responded to Bible truth and was later joined by her husband. He became a faithful brother and served as a Christian elder until his death. Today there are thriving congregations in some of the towns where Emily sowed seeds of Bible truth.

African Hospitality and Ingenuity

Meanwhile, in the tribal territories, the African Witnesses' deep appreciation for Jehovah's organization and its traveling representatives was a moving experience for me. I was well cared for by these loving Christian brothers. Every Monday I traveled from one assembly location to the next. My accommodations would be a newly constructed grass hut, which brought back memories of my family homestead in Saskatchewan. My bed was a 12-inch-thick grass bundle spread out on the floor, with a sheet pulled over it.

The assemblies in the tribal areas were generally held in a natural forest setting. Those attending cleared the undergrowth, leaving trees with abundant foliage for shade. Bundles of grass tied neatly and arranged in orderly lines provided the seating. Finally, a grass fence was constructed to enclose the clearing. In these pristine settings, my heart was always touched by the melodious voices of our African brothers and sisters singing praises to Jehovah in unforgettable harmony.

A Memorable Experience

In the course of my ministry, I met Gideon Zenda, a chief inspector of schools for the missions run by the Anglican Church. Gideon had received his education, including university training, through the church. However, he had not received satisfactory answers to many of his Bible questions. So he requested that I meet with him and several of his colleagues to address these questions. Some 50 people were present for this session, including school inspectors, headmasters, and teachers. Gideon

chaired the session. In an orderly fashion, we went from subject to subject. I spoke for 15 minutes on each subject and then entertained questions. The session lasted several hours.

The result of this unusual exercise was that Gideon, his family, and a large number of his colleagues all became dedicated, baptized servants of Jehovah. The local bishop terminated their employment in the Anglican educational system. All, however, were undaunted and remained steadfast in Jehovah's service, some taking up the pioneer ministry.

Response to a Dramatic Film

In 1954, Jehovah's Witnesses released the motion picture *The New World Society in Action*. The following year the legal restrictions that had earlier been imposed on a wife accompanying her husband into tribal areas were lifted. This allowed Emily to travel with me into the tribal territories. At that time we were provided with a motor vehicle, an electrical generator, and a projector to show the movie throughout the tribal communities. Many had never before seen a movie, so our showings attracted a lot of attention. The film showed the step-by-step production of Bibles and Bible literature at our large printery in Brooklyn, New York.

The movie also included scenes of the international brotherhood of Jehovah's Witnesses sharing in worship at Yankee Stadium, New York, in 1953. Never before had these Africans seen such a demonstration of interracial unity and love. This film moved scores of Zimbabwean families to study the Bible and associate with the Witnesses. Requests for showings of this movie literally poured in from headmasters across the country who recognized the educational value of such a visual aid for their pupils.

Late one evening I was awakened by Witnesses requesting that I show the movie. To my amazement about 500 people had walked several hours to see it. They had heard that I was in the area and had been showing it. By the time that crowd dispersed, another group

I shared in teaching these traveling overseers in Zimbabwe

of 300 had arrived. So I showed the movie again. It was not until three in the morning that the final viewers left! Over a 17-year period, in Zambia alone, more than a million people saw that powerful movie!

New Assignments in Africa

After serving over five and a half years in Zimbabwe, we were transferred to South Africa. This meant that we had to learn the Afrikaans language. Later we also learned to speak Sesotho and Zulu. Being able to teach God's Word in additional languages increased our effectiveness in the ministry and gave us a sense of accomplishment.

Early in 1960 we were assigned to the traveling work in southern Africa. For the following 27 years, we traveled extensively throughout Lesotho, Namibia, South Africa, and Swaziland as well as the islands of Ascension and St. Helena in the South Atlantic Ocean. Altogether, we traveled hundreds of thousands of miles serving our Christian brothers and sisters. Their acts of faith and loyalty under unfavorable circumstances have served to encourage us never to give up.

For example, I became personally acquainted with Witnesses in Swaziland who did not compromise their faith when King Sobhuza II died. Since they refused to participate in unscriptural rituals held at the death of such a dignitary, they were dismissed from their places of employment and denied their rights as citizens. Despite years of deprivation and hardship, they never gave up their faith. To have known these wonderful Christian brothers and sisters and to have talked with them face-to-face is a grand privilege for which I will always thank Jehovah.





**We built this camper
for Emily's recovery**



**A recent photo
with Emily**

Then there is Philemon Mafereka, a pioneer from Mokhotlong, Lesotho, which is located in the mountains at an elevation of over 10,000 feet. Since there was no transportation available, he and his dear wife, their two children, and four candidates for baptism walked 70 miles to an assembly held at an elevation of 4,000 feet. Most of the way, they had to negotiate steep terrain. They scrambled up and down gullies and forded numerous streams and rivers.

Homeward bound after the assembly, they carried along a hundred copies of the book *The Truth That Leads to Eternal Life*. These were intended for people back home in Mokhotlong. But because of all the interest in Bible literature that they encountered along the way, their supply of books was exhausted before they reached home. Seeing firsthand the zeal and devotion of Christian brothers and sisters like Philemon and his wife has been a privilege for Emily and me, which we cherish to this day.

At times, we encountered dangers from poisonous snakes, such as cobras, as well as from flash floods and other hazards. These experiences, although frightening at the time, pale into insignificance when compared to the rewards and joys of a career in Jehovah's service. We learned that he never abandons his loyal ones.

When Emily had serious health problems, Jehovah gave us the wisdom to deal with the situation in a balanced way. A change of diet and arranging for better sanitary conditions helped to facilitate her recovery. We built a camper on a light truck to enable Emily to have a controlled environment as we traveled, and in time, she was restored to good health.

Return to Canada

In 1988, after 35 years of missionary work in the fascinating continent of Africa, we were assigned back to Canada. Then, in 1991, I once again began serving as a traveling overseer. Eight years later I suffered a stroke. Although my activity has been greatly limited since then, I still find pleasure in serving as an elder in one of the congregations in London, Ontario.

Today I look back with satisfaction to the time when I started out as a pioneer on horseback in southern Saskatchewan some 56 years ago. How grateful I am that Father persisted in teaching us how to think as spiritual people, never being afraid to stand up for truth and righteousness! He opened up God's Word for me, which gave me a purposeful life. That heritage has stood by me all my days. I would never trade my life in Jehovah's service for anything that this old world has to offer.

A Parasitic yet Useful WASP

TRUE, the ichneumon wasp is strange looking, almost frightening. But why is it labeled parasitic? Because it usually propagates by laying an egg on or in the larva of another insect or a spider.

In North America there are more than 3,000 species of true ichneumon wasps. These wasps, in turn, are part of a large family of different types of parasitic wasps. Scientists estimate that worldwide more than 40,000 species belong to this insect family.

Ichneumon wasps vary in size from about an eighth of an inch to two inches long. Their slender, curved abdomen is longer than the head and thorax together. Ichneumons are different from stinger wasps in that they have longer antennae.

The most distinguishing feature of ichneumons is a needlelike tube at the end of the abdomen. Called an ovipositor, this egg-laying structure is often longer than the body. It is no thicker than a horsehair and has three threadlike strands that slide back and forth to force the egg down the tube.

How does the ichneumon detect the larva of a potential host? The female *Megarhyssa* wasp, a genus of ichneumon, has been observed tapping a tree with her antennae to pick up vibrations of a larva living an inch or more beneath the tree bark. Once she senses that there is a larva, she intensifies the tapping. Eventually, she begins to probe into the bark with the tube, as if drilling into it.

Observers have noted: "Once the tip of the wasp's ovipositor touches the larva, a single egg is squeezed down the tube, to be planted next to, or on top of, the doomed host." When the egg hatches, the new larva feeds on the host larva's fats and

body fluids. Then it spins a silken cocoon in which it will develop into an adult wasp. When the wasp reaches the surface of the tree, it is ready to plague a new generation of insects.

Although one may describe this insect group as ruthless parasites, ichneumon wasps serve an important purpose. Their larvae feed on insects that are harmful to food crops, including chinch bugs, boll weevils, codling moths, and asparagus beetles, to name a few. So ichneumons evidently control the proliferation of agricultural pests.

Even though ichneumons are very numerous, they are seldom seen by people because they generally feed, breed, and lay eggs in habitats seldom visited by humans. Ichneumons thus serve as another example of the diversity and balance of living things that man has yet to comprehend fully.

Ichneumon wasp preparing to lay its egg

Scott Bauer/Agricultural Research Service, USDA



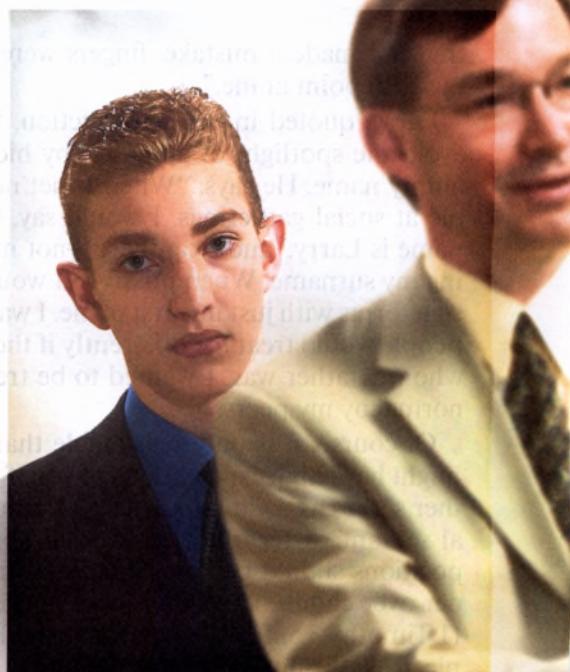
Young People Ask . . .

How Can I Come Out From Under My Parents' Shadow?

"My father is a well-known elder in a congregation of Jehovah's Witnesses. I respect him, but at times I have resented the fact that everywhere I go I am known just as Bill's son."—Larry.*

"Because my father is a prominent elder, I felt everyone had high expectations of me, and it was very difficult for me just to be myself."

—Alexander.



it may be that they are well-known in the Christian congregation. If either is true of your parents, you may sometimes feel that you live under a spotlight and that everything you do is under constant scrutiny. You may resent the pressure you feel to behave in certain ways simply because of who your parents are.

Ivan's father, for example, serves as an elder in a local congregation of Jehovah's Witnesses. Ivan says: "Because my father was widely known and respected, I always felt I had to be an example at school and at home. I felt that I was used as a benchmark by other parents for how they expected their children to act. While flattering, this put me under great pressure to perform in front of others. As a result, I sometimes lacked modesty and failed to recognize personality flaws in myself." Alexander says: "I felt that I was being watched all the time and

AS YOU get older, it is only normal for you to desire some independence—to be able to establish your own name, or reputation. At your birth your parents chose a name for you that appealed to them. Now, as you develop as an adolescent, you want the chance to choose your own "name"—that is, to make a reputation for yourself.

King Solomon wrote: "A [good] name is to be chosen rather than abundant riches; favor is better than even silver and gold." (Proverbs 22:1) Even while you are young, you will probably want to begin to establish your own identity.

Living in Their Shadow

Like Larry and Alexander, some youths feel that they live in the shadow of their parents' name or achievements. Perhaps their parents are prominent in the community because of their jobs or education. Or

* Some names have been changed.

that if I made a mistake, fingers were always ready to point at me."

Larry, quoted in the introduction, tried to avoid the spotlight of attention by hiding his family name. He says: "When I met new people at social gatherings, I would say, 'Hi, my name is Larry,' and stop there—not mentioning my surname. When possible, I would even sign forms with just my first name. I was afraid people would treat me differently if they knew who my father was. I wanted to be treated as normal by my peers."

Of course, it is only reasonable that others might have high expectations of you if your father serves as a Christian elder or a ministerial servant. After all, men in such appointed positions should be "presiding in a fine manner over children and their own households." (1 Timothy 3:5, 12) No wonder, then, that people expect you to be exemplary! But is that entirely a bad thing? Not when you consider that the Christian youth Timothy, while perhaps still a teenager, was chosen by Paul to travel with him and to share in vital ministerial work. (1 Thessalonians 3:1-3) So you should strive to be an example, whether your father is an appointed elder or not.

Your good example can benefit others

Rebellion a Poor Choice

Still, some youths try to come out from under their parents' shadow by rebelling. Ivan says: "There were times when having to be an example irritated me. I rebelled by seeing how long I could grow my hair before someone said something."

Absalom, one of King David's sons, followed a rebellious course. His father was famous for his devotion to Jehovah and was loved by many in the nation of Israel. Much

Rebelling will only bring your parents grief and damage your reputation

was expected of Absalom as David's son. But instead of living up to reasonable expectations, Absalom chose to establish a name for himself by rebelling against his father. Since David was Jehovah's anointed representative, Absalom was really rebelling against Jehovah. His actions brought shame on the family and disaster on himself.—2 Samuel 15:1-15; 16:20-22; 18:9-15.

Rebelling could likewise have devastating consequences for you. Consider what the Bible tells us about Nehemiah. Some of his ene-



mies tried to trick him into ungodly behavior. Why? "So that they could ruin my reputation and humiliate me," said Nehemiah. (Nehemiah 6:13, *Today's English Version*) Rebelling could give you a bad name—one that people may find difficult to forget.

Not to be overlooked is the effect rebellious behavior can have upon others. At the very least, you would cause your parents needless grief. (Proverbs 10:1) Your actions could also adversely affect other youths. Admits Ivan: "My conduct had an adverse effect on my brother. For a time he left the Christian congregation entirely, pursuing all the things that he knew did not measure up to Bible standards. Thankfully, he came to his senses and is now serving Jehovah again and is happy."

A Better Way

Absalom's half brother Solomon took a different course. He was willing to learn humbly from his father, David. (1 Kings 2:1-4) Rather than seek to promote himself, Solomon sought to make a good name with God. As long as he did so, he brought honor to his family and established a reputation as one of Israel's greatest kings.—1 Kings 3:4-14.

Solomon's good example highlights two important facts: First, you establish your own identity, not by seeking to distance yourself from your family, but by learning from your family's strengths. The journal *Adolescence* says: "By no means must adolescence be a time of detachment from parents in order for youth to achieve a strong sense of identity." Your ability to establish your own identity "is not disrupted by parental support," the journal continues, "but rather [it is] nourished [by it]."

Interestingly, Solomon himself exhorted: "Listen to your father who caused your birth, and do not despise your mother just because she has grown old." (Proverbs 23:22) Solomon was evidently not writing to young children because by the time parents have "grown old," the child is likely an adult. The point? Even when you are older and have established

your own household, you can still benefit from your parents' wisdom. Ivan came to realize that himself. He says: "As I grow older, I try to copy the strengths of my parents while trying to avoid their mistakes."

A second point to consider is that Solomon's priority was, not establishing his own "identity," but pleasing Jehovah. True, much was expected of him as David's son. But Solomon's reliance on Jehovah enabled him to shoulder his responsibilities. Alexander has adopted a similar view. He says: "I now accept the fact that more is generally expected of elders' children. I decided to use this in a positive way, and it has proved to be a protection for me. I have come to realize that Jehovah's view of me is the most important thing. He knows me for who I am and not just who I am related to."

Daryn, whose father is a graduate of the Watchtower Bible School of Gilead*—a school that trains missionaries—has also learned to cope with having well-known parents. He says: "When I was baptized, I dedicated myself to Jehovah and not to anyone else. By living up to my dedication to the best of my ability, I have inner peace that comes from knowing that Jehovah is pleased with me, even if I am unable to accomplish all the things my parents did."

King Solomon made this observation: "Even by his practices a boy makes himself recognized as to whether his activity is pure and upright." (Proverbs 20:11) When all is said and done, people will remember you for what you say and do. Be an example "in speaking, in conduct, in love, in faith, in chasteness." If you are, people will love and respect you for who you are!—1 Timothy 4:12.

For other youths, though, the challenge is to come out from under the shadow of brothers or sisters who are high achievers. A future article will discuss how you can face this challenge.

* Gilead School is managed and directed by Jehovah's Witnesses.

Watching the World

Weight Loss or Money Loss?

"About 231 million people in the European Union attempted a diet in 2002," states the *International Herald Tribune* of Paris. According to a report by Data-monitor, a group that tracks developments in industry, dieters in Europe spent 100 billion dollars on slimming products last year—"the equivalent of the economic output of Morocco." However, "fewer than 4 million will succeed in keeping trim for more than a year," and "fewer than one dieter in 50 in Europe achieves permanent weight loss," says the paper. Germany topped the spending spree, dieters paying out nearly 21 billion dollars on slimming products, while Britons spent about 16 billion dollars. Consumers in Italy and France handed over about 15 billion and 14 billion dollars respectively. According to Datamonitor, says the *Tribune*, "the message that dieters need to receive is that a diet alone is not a long-term solution to excessive weight."

Quarter-Life Crisis

The "golden twenties" ought to be "the ideal time for a happy, relaxed life," says the German newspaper *Gießener Allgemeine*. "Puberty is over with, and a mid-life crisis is still far off." But instead of being happy and relaxed, a growing number of 20-somethings are facing what specialists call a quarter-life crisis. The term "stands for the identity crisis young people suffer when they are about to finish their education and have to decide what to do with the rest of their life," says the paper. Mannheim psycholo-

gist Christiane Papastefanou explains that social developments in recent years contribute to anxiety about the future. Additionally, given the large number of job possibilities and life-style options available today, some young people fear making the wrong choice. However, Papastefanou, quoted in the German paper, believes that decisions are not irrevocable and that it is not wrong to make "a few detours on the road through life."

New Technology Exposes Truancy

"New technology lets teachers send text messages to parents when students cut class," says the English edition of the Spanish newspaper *El País*. In 200 schools in Spain, a special computer system has been installed enabling teachers to report examination results, re-

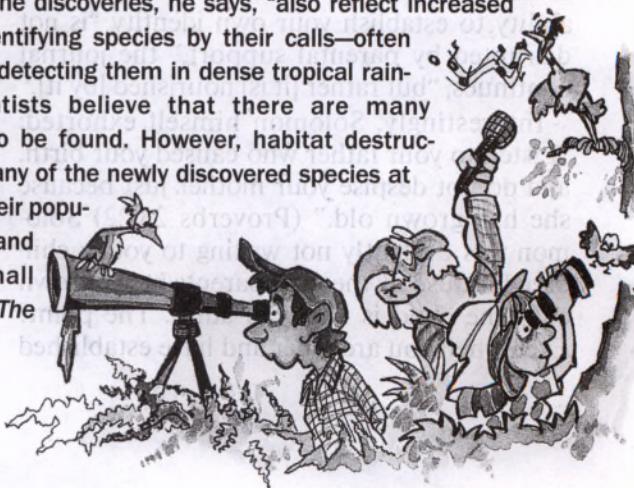
cord absences, and indicate sanctions imposed on pupils. Every morning, teachers take roll call with a hand-held unit the size of a pocket calculator. Next, they plug the unit into the central computer, which processes the data. "In some cases, automatic messages are relayed to parents' cellphones," says the paper. As a result of this technology, absenteeism that previously went unnoticed is now registered. According to the Spanish edition of *El País*, 400 more schools are interested in installing the computer system.

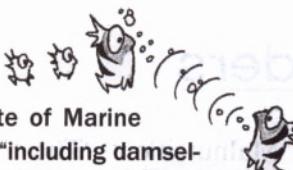
Redecorating May Harm Baby's Health

"If people redecorate their home during pregnancy or shortly after the birth of their child," notes Germany's newsletter *Medi-Netz*, "the baby might suffer from irritations of the respiratory tract or even from a respiratory disease during the first few months of its life. Now

New Bird Species Discovered

"A total of 28 new species [of birds] have been described in scientific journals since 1998, and research could add many more to the world total of about 9,700," says *The Independent* of London. According to Steve Gantlett, editor of the magazine *Birding World*, "many of these discoveries result from the world becoming much more accessible—ornithologists can go to remote places virtually out of reach a few decades ago." The discoveries, he says, "also reflect increased expertise at identifying species by their calls—often the only way of detecting them in dense tropical rainforests." Scientists believe that there are many more species to be found. However, habitat destruction may put many of the newly discovered species at risk "because their populations are low and confined to small areas," explains *The Independent*.





Noisy Fish

Researchers at the Australian Institute of Marine Science (AIMS) have discovered that fish, "including damselfish, soldierfish and cardinalfish . . . conversed via a series of grunts, squeaks and whistles," reports *The West Australian* newspaper. This finding helps explain how baby fish, when swept away from a reef, find their way home again. AIMS researchers recorded reef noises and played them back in fish traps.

Scientist Dr. Mark Meekan told the paper that "more baby fish were collected in fish traps that broadcast the recordings than in traps without the noise, indicating [that] fish were drawn to particular sounds."

Researchers have discovered that some adult fish sounds can be detected up to 10 miles away. "At dusk and dawn," said Meekan, "the

chorus of fish sounds reaches a crescendo equivalent to the roar of thousands of voices at a football stadium."

However, this "chorus" is inaudible to human ears.

It has been discovered that the child's immune system is affected as well, even in the womb, making the child more prone to infectious diseases and to allergies." Researchers in a number of clinics and institutes in Germany found that problem chemicals include those emitted from adhesives, carpet, fresh paint, and new furniture. "Volatile chemicals weaken those very cells in our immune system that can protect us from allergic reactions," says *Medi-Netz*. A similar report in *GEO* magazine recommends that parents postpone redecorating "until the baby is two years of age," when its immune system is stronger.

Sports Clubs and Addictive Substances

"Young people in sports clubs use more alcohol and get drunk more often than others," says

the Finnish Broadcasting Company's on-line news. The findings, published by the Research Center of Health Promotion at the University of Jyväskylä, found that "liquor, beer, and cigarettes are far too often linked with sports through advertising and sponsorship," says the Helsinki newspaper *Helsingin Sanomat*. "Young people follow the example of older athletes who are admired and imitated. The champagne baths and cigar smoking in the championship celebrations do not go unnoticed by the youths." Inhaling snuff, a preparation of pulverized tobacco, was another problem. "Under 4 percent of 15-year-old boys who are not in sports clubs had inhaled snuff weekly, but in sports clubs almost 10 percent did," says the paper.

The Blink of an Eye

"Thousands of neurons belonging to more than 30 different groups are needed to produce the movements of our eyelids," explains Spain's *El País* newspaper. These neuronal groups, which link "the eyelid itself to the cerebral cortex," have been identified more precisely than ever before by a team led by Spanish neuroscientists, who conducted their study on animals. Why do eyelids need such a large, complex array of neurons? Because they do not always close in the same way or for the same reason. Eyelid functions include automatic blinking—about 15 times a minute to keep the cornea wet—as well as reflex blinking when something quickly approaches the eyes and voluntary, or deliberate, blinking. Eyelids can also close partially, perhaps in response to certain emotions, or fully for various lengths of time.

Computers—Their Environmental Cost

"The clean, gleaming image of the modern computer belies its true environmental cost," says *New Scientist* magazine. Simply making a basic memory chip and using it for a typical computer's four-year life span "eats up 800 times the chip's own weight in fossil fuel," explains the magazine. Analysts in Japan, France, and the United States estimate that to manufacture and use a 32-megabyte memory chip weighing two grams takes a minimum of 1.6 kilograms of fossil fuel, plus at least 32 kilograms of water and 72 grams of toxic chemicals such as ammonia and hydrochloric acid. The analysts conclude: "The environmental weight of semiconductors far exceeds their small size."

From Our Readers

Malnutrition I read the series "Malnutrition—The Silent Emergency" with much interest. (February 22, 2003) In Japan we don't have much of a problem like this, so I was very surprised at what I read. I hope the good news of God's Kingdom can be preached all the more to people suffering from this problem.



Y. T., Japan

UN/DPI Photo by Eskinder Debebe

February 22, 2003 was very well done. It was quite specific and revealed the dangers concealed in modern music.

M. M., Japan

When I received the article, I read it all the way through immediately. A lot of my friends watch music videos, and they love to talk about them. The article has helped me not to give in to the temptation to watch them. I am 12 years old, and the article came just in time for me.

K. W., United States

I really enjoyed the article. I am a full-time evangelizer and know that it's important for me to set a good example for other young ones. So when youths ask me why I haven't seen a certain music video, now I can say that it's because I don't want to ruin my relationship with Jehovah. Please continue to print informative "Young People Ask . . ." articles.

R. B., United States

I'm nearly 21, and I enjoy watching music videos. You were right to note, however, that these videos have an influence on those who watch them. Often, young ones like a piece of music because of its tune or rhythm but do not worry about the words. This is especially so when the words are in a foreign lan-

guage. The videos often reveal what spirit that music really conveys. Sometimes I am surprised to see the video for a song that I thought was appropriate! When I see a debasing video, I switch channels and do not listen to that song anymore.

T. G., France

Wildebeests I really liked the article "The Great Migration." (February 22, 2003) I love animals, and when a new issue of *Awake!* arrives, the first thing I do is read any articles about them. I was amazed to read that when in danger, the female wildebeest can interrupt the birth process and complete it at a safer time and place! Please keep publishing these beautiful articles.

K. R., Italy

Unforgivable Sin I do not know how to express my gratitude to Jehovah and to you for the article "The Bible's Viewpoint: Is There an Unforgivable Sin?" (February 8, 2003) I have been looking for such information for some time. I had been trying to understand Hebrews 10:26, and I thought it applied only to the 144,000, who are going to heaven. Thanks for clearing this up.

R. A. P., Ghana

Syria I really appreciated the originality of the article "Syria—Echoes of an Interesting Past." (February 8, 2003) Being very keen on history and geography, I found it interesting to be able to link Bible verses with a precise spot on the map. I hope that you will publish other articles of this sort.

M. P., France



The World's Largest Seed

Many years ago, when an unusually large seed washed ashore on islands of the Maldives and Indonesia, it captured the human imagination. Myths circulated about its origin. Some thought it came from an underwater tree. Thus, it was given the name Coco-De-Mer, or sea coconut. It was even believed to be the forbidden fruit that was eaten by Adam in the garden of Eden. However, the truth was finally discovered in the middle of the 18th century. This mysterious seed had come from a type of palm tree found only in the Seychelles, a small group of islands in the Indian Ocean.

The largest concentration of the Coco-De-Mer is found in the Vallée de Mai, on the island of Praslin. These palms can reach up to 100 feet in height and are estimated to live for hundreds of years. One fascinating fact about the Coco-De-Mer is that it is dioecious; there are male trees and female trees. For the female to produce fruit, it must be pollinated by a male

Coco-De-Mer. So mature trees from both genders must be present for the species to survive in the wild.

The fruit from the female Coco-De-Mer is truly one of a kind. On the tree it looks like a huge, green heart. But inside is a large double-lobed seed that can weigh up to 40 pounds. Some fruits have more than one seed. It is little wonder that the Coco-De-Mer has made it into *The Guinness Book of Records* as having the world's largest seed.

Looking up at clusters of this boulderlike fruit puts one in awe of such a marvel of creation. It also puts one in a rather precarious situation. These clusters can weigh in at 400 pounds. Amazingly, though, there have been no reported casualties from falling fruit. Still, it is wise not to visit the Vallée de Mai during very stormy weather. This curious fruit is best admired under peaceful conditions.

COMFORT AT THE RIGHT TIME

Many people are in need of comfort in these critical times, particularly when faced with the loss of a loved one. One woman suffered the deaths of her mother and her unborn baby in close succession. She wrote to the branch office of Jehovah's Witnesses in Mexico: "My greatest comfort was receiving the brochure *When Someone You Love Dies*. This was very valuable information that came at the right moment. Thank you for your Christian love and diligence in providing Bible publications such as this."

She was particularly comforted by scriptures quoted in the brochure. For example, 1 Corinthians 15:26 states: "As the last enemy, death is to be brought to nothing." Perhaps you or someone you know will also receive comfort from reading this 32-page brochure. *When Someone You Love Dies* considers such topics as "How Can I Live With My Grief?", "How Can Others Help?", and "A Sure Hope for the Dead."



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