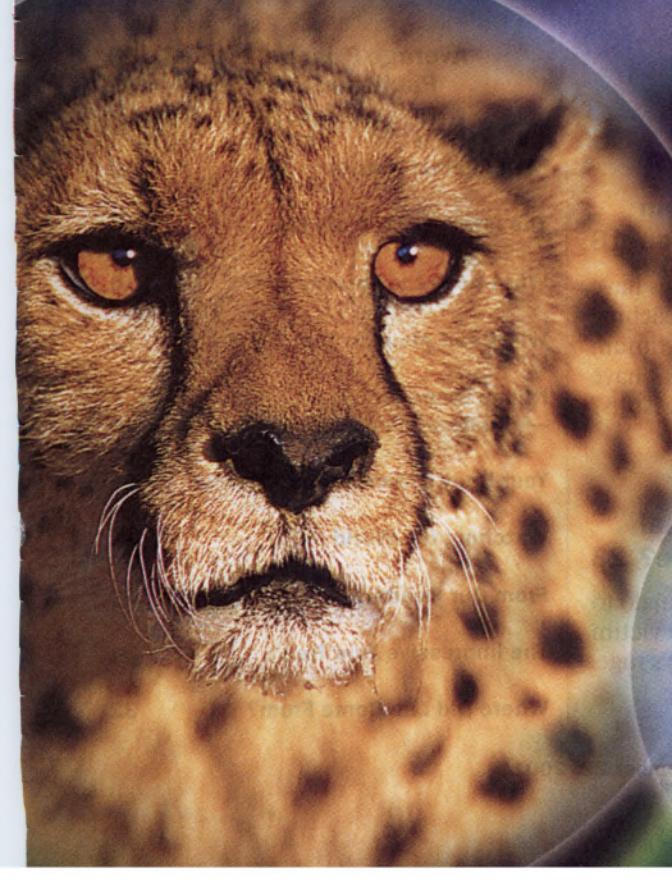


Awake!

November 22, 2001

**Who Will
Protect the
Web of Life?**

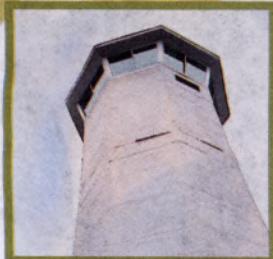


Who Will Protect the Web of Life? 3-11

Earth's many species form an intricate web of life. Many scientists, however, fear that species are vanishing at an alarming rate. Should you be concerned?

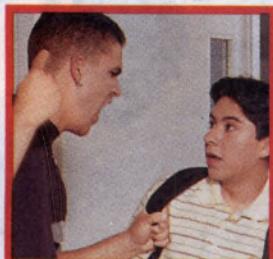
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Man Against Nature

"Today it is humans who should accept responsibility for the increasing rates of species extinction."

—JANE GOODALL, CONSERVATIONIST.

LIFE on earth is dynamic and interrelated. We humans are an intrinsic part of it. We depend on the living world for our food and medicines, the oxygen we breathe, and the elements that form our bodies. In the course of a normal day, earth's human population utilizes more than 40,000 other living species. All of earth's species together weave a complex, astonishing, and intricate web of life.

However, many experts who study this complex web feel that it is under attack! Perhaps you have heard about endangered rhino, tigers, pandas, and whales. Some scientists claim that 50 percent of all plant and animal species could vanish from the earth in 75 years. Researchers fear that some species may disappear 10,000 times faster than what scientists call natural extinction rates. One expert estimates that species are dying at the average rate of one every 10 to 20 minutes.

Scientists believe that in the distant past, species extinction was mostly triggered by natural causes. But the principal cause of the present crisis is different, they say. Evidently, today's extinctions are caused by human activity. One scientist referred to humans as the "exterminator species."

Are human activities really causing this dramatic loss of biological diversity? If so, how? Can we survive without the kaleidoscope of life on earth? Is anything being done to stem the tide of what many feel is an extinction crisis in the living world?



The Intricate Web of Life

*"The variety of life is our insurance policy.
Our own lives and livelihood depend on it."*

—UNITED NATIONS ENVIRONMENT PROGRAMME.

LIFE on earth is abundant and immensely diverse. The term "biological diversity," or "biodiversity" for short, designates all the world's species, ranging from the smallest bacteria to the giant sequoias; from earthworms to eagles.

All this life on earth is part of one great, interdependent web that also includes non-living elements. Life depends on nonliving components such as earth's atmosphere, oceans, fresh water, rocks, and soils. This community of life is called the biosphere, and humans are an integral part of it.

Biodiversity embraces all the bacteria and other microbes. Many of these are known to perform vital chemical functions that keep ecosystems operating. Biodiversity, or the web of life, also includes the green plants that produce oxygen through photosynthesis, trapping solar energy and storing it in

the form of sugars, which are the base of energy resources for most other forms of life.

Vanishing Variety

Sadly, despite the beauty and variety of life-forms, a number of researchers say that man is pushing species to extinction at an alarming rate. In what ways?

■ **Habitat destruction.** This ranks as the leading cause of extinction. It includes logging, mining, clearing trees for cattle, and building dams and highways where wilderness once existed. As ecosystems shrink, species lose the resources they need to survive. Natural environments are fragmented, degraded, and eliminated. Migration routes are disrupted. Genetic diversity diminishes. Local populations of living things cannot rebound from disease and other stressors. Hence, one by one, species gradually die out.

The extinction of certain species can even trigger a chain reaction of extinctions, for

Awake!

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

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when one part of the web of life is eliminated, others can be affected. Extinction of key-stone species—such as pollinators—can affect a myriad of other species.

■ *Introduced species.* When humans introduce a foreign species into an ecosystem, that species may take over niches that other species have occupied. The foreign species might also indirectly change the ecosystem enough to force out native species, or it might bring with it diseases to which the natives have no immunity. Especially on islands, where species have long existed in isolation and have not dealt with newcomers, the original inhabitants may be unable to adapt and survive.

A typical example is a “killer” alga, *Caulerpa taxifolia*, which is destroying other marine species in the Mediterranean Sea. Introduced accidentally off the coast of Monaco, it has now begun to spread on the seabed. It is toxic, and it has no known predators. “We could be seeing the beginning of an ecological catastrophe,” says Alexandre Meinesz, professor of marine biology at the University of Nice, France.

■ *Overexploitation.* This has led several species to extinction. A classic case is that of the passenger pigeon. In the early 19th century, it was the most abundant bird in North America. When it migrated—in flocks of a billion or more—it darkened the skies for days at a time. However, by the end of the 19th century, it had been

hunted to the brink of extinction, and in September of 1914, in a Cincinnati zoo, the last remaining passenger pigeon died. Similarly, the American bison, or buffalo, of the Great Plains was nearly hunted out of existence.

■ *Human population growth.* The human family in the mid-19th century had a population of one billion. One and a half centuries and five billion people later, humans are beginning to wonder whether they are in danger of exceeding the limits of their resources. Each year, as the human population continues to grow, species are becoming extinct at an alarming rate.

■ *Threat of global warming.* According to the Intergovernmental Panel on Climate Change, it is possible that temperatures could rise by as much as 6.3 degrees Fahrenheit within this century. This may be too fast a jump for some species to survive. According to researchers, it appears that a contributing cause of the death of coral reefs (anchors of much of marine biodiversity) is warming water.

Scientists say that a three-foot rise in sea levels could eliminate a large portion of the world’s coastal wetlands, the home of abundant biodiversity. It is believed by some that global warming may be affecting the

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**The passenger pigeon,
now extinct**

U.S. Fish & Wildlife Service, Washington, D.C./Luther C. Goldman

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America, United States of,
Wallkill, NY 12589

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Greenland and Antarctic ice sheets. If these were to melt, environmental catastrophe could follow.

An Epidemic of Extinctions

How fast are species being lost? Answers to that question are very inexact. Most of what is being lost is still a mystery to scientists. First they have to establish how many species exist. According to John Harte, ecological scientist at the University of

Greenland and Antarctic ice sheets. If these were to melt, environmental catastrophe could follow.

cipher the intricate ecological mechanisms that keep natural communities running smoothly. If humans do not know how many species there are, how can they understand the complex web of life and how it is affected by extinctions? How can they tell what the species' disappearance might mean for the planet's life-support system?

When scientists try to determine the rate of extinction, their estimates, although varied, are often disheartening. "Some 50 percent of the world's flora and fauna could be on a path to extinction within a hundred years," states one writer. Harte's prognosis is even more grim: "Biologists estimate that tropical deforestation will result in the loss of half or more of the existing species on earth during the next 75 years."

Based on the calculations of scientist Stuart Pimm of the University of Tennessee, *National Geographic* states that "11 percent of birds, or 1,100 species out of the world's nearly 10,000, are on the edge of extinction; it's doubtful that the majority of these 1,100 will live much beyond the end of the [21st century]." The same magazine stated: "A team of respected botanists recently reported that one in eight plants is at risk of becoming extinct. 'It's not just species on islands or in rain forests or just birds or big charismatic mammals,' says Pimm. 'It's everything and it's everywhere. . . . It is a worldwide epidemic of extinctions.'"

Do We Need All These Species?

Is there reason to be concerned about the loss of life's diversity? Do we really need such a variety of species? Many respected experts insist that the answer is yes. Earth's endowment of species provides humans with food, useful chemicals, and many other products and services. Think, too, about the potential benefits that undiscovered species may hold for mankind. For example, it has been estimated that 120 of the top 150

What Is Life Worth?



All the discussion about the value of biodiversity may seem to indicate that we should care about other life-forms only as long as they serve our needs. Some feel that such thinking is narrow-minded. Paleontologist Niles Eldredge points to the inherent value life has: "We humans also value life around us—beautiful, eye-catching species, gorgeous intact wild places—for its intrinsic worth.

Something within us recognizes that we are connected to this natural world and that we gain peace and pleasure from being in it whenever we can."

California, Berkeley, "there are about one and a half million named species on earth, but we know that many unnamed species exist, and the total number is probably between 5 and 15 million." Some raise the estimate to 50 million species or more. Determining the exact number is all but impossible because "most extinctions will occur before the species have even been named and described," according to scientist Anthony C. Janetos.

Modern science has barely begun to de-

The Red List

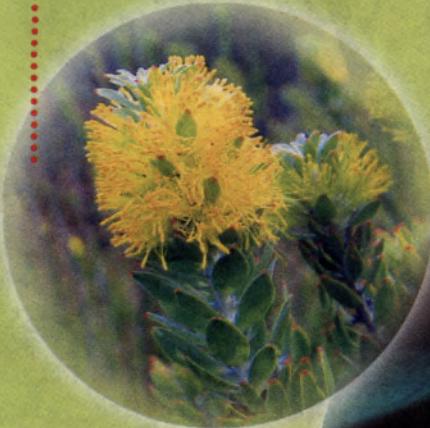
The "Red List" is published by the International Union for Conservation of Nature and Natural Resources, an organization that evaluates the condition of endangered species. A few of the threatened species included in the "Red List" for the year 2000 are featured on this page:



Golden pagoda (*Mimetes chrysanthus*)

This beautiful flower was discovered in 1987 in Western Cape, South Africa. Frequent wildfires and invasive species that are alien to the golden pagoda's habitat pose a constant threat to this plant.

Photo by Craig Hilton-Taylor



Wandering albatross

(*Diomedea exulans*)

This is one of 16 albatross species identified as globally threatened. It is said that significant numbers drown after being accidentally caught on baited hooks set by long-line fishing boats.

Photo by Tony Palliser



Corsican snail (*Helix ceratina*)

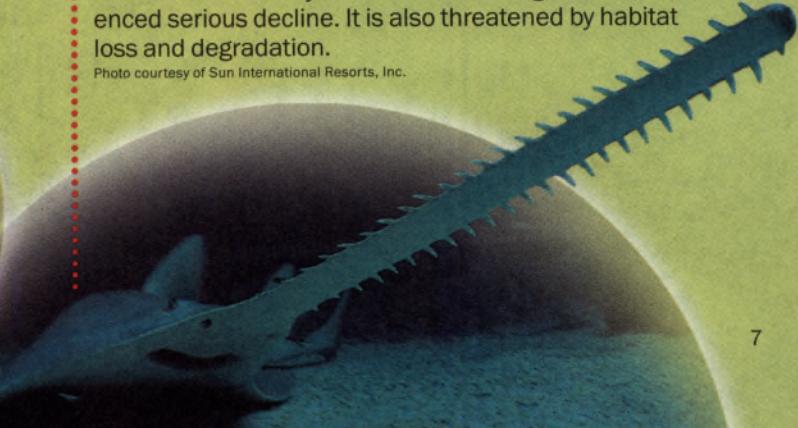
The habitat of this critically endangered snail is only 20 acres in the suburbs of Ajaccio, on the southwest coast of Corsica. Its survival may be in jeopardy because of development that includes the construction of an airport and of access roads to the beach.

Photo by G. Falkner

Freshwater sawfish (*Pristis microdon*)

This endangered fish is found in the Indian and West Pacific oceans, as well as in adjoining bays, estuaries, and rivers. It is extremely vulnerable to fishing and has experienced serious decline. It is also threatened by habitat loss and degradation.

Photo courtesy of Sun International Resorts, Inc.



(Continued from page 6)

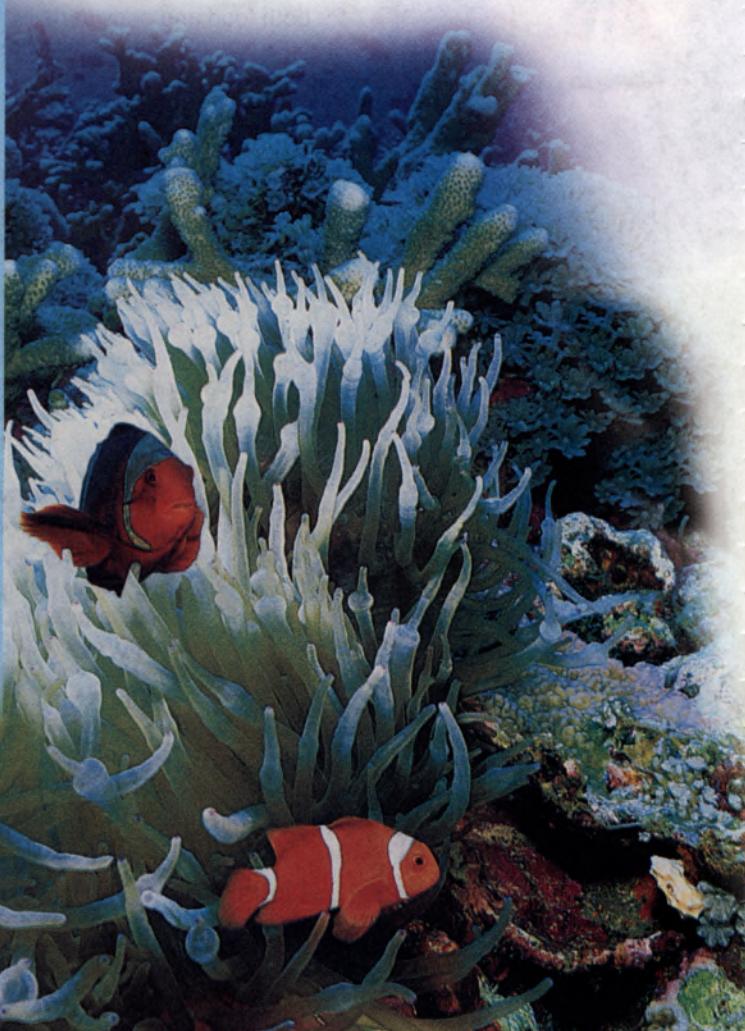
Decimating Sea Life

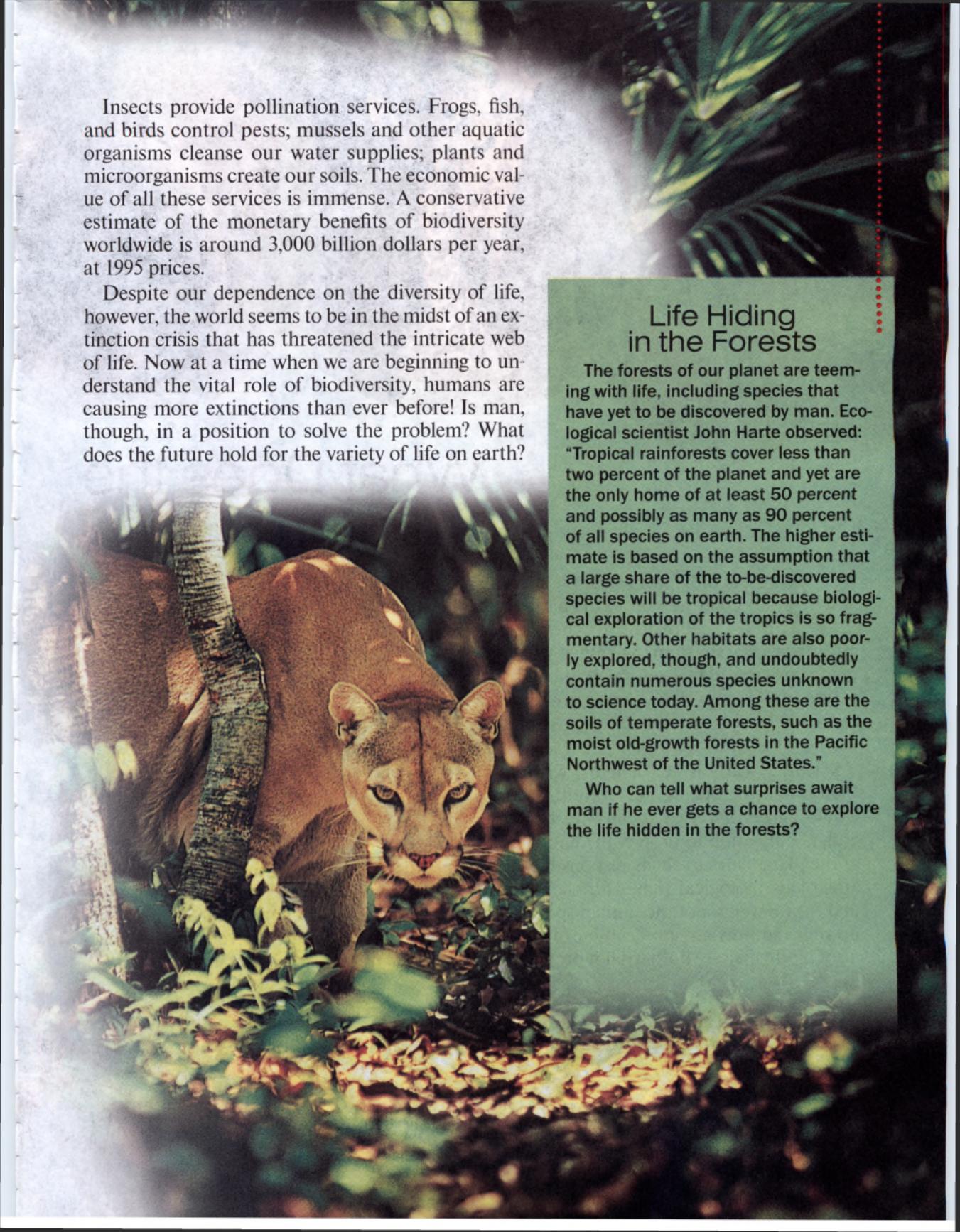
The wealth of the oceans, once deemed inexhaustible, has proved finite. Paleontologist Niles Eldredge, writing in *Natural History* magazine, described the extent of the over-exploitation of the oceans: "Modern technology has made marine fishing so efficient that vast tracts of ocean bottom are being denuded in the marine equivalent of forest clear-cutting. This very same technology, however, is hideously wasteful; marine turtles and seals, along with many unmarketable species of fish and invertebrates, die with every pull of the net or passage of the trawler."

Commenting on what it called "the wasteful wake of shrimping," *National Geographic* magazine explained that "along the Gulf Coast [off Texas, U.S.A.] a dozen pounds of sea life—much of it juvenile fish—may be sacrificed for a single pound of shrimp." These unwanted fish and shellfish are called bycatch. A federal biologist lamented: "The average bycatch ratio is about four to one." No wonder our oceans have become the killing fields of many an endangered species!

prescription drugs used in the United States come from natural compounds. Thus, in losing the flora of the world, mankind also loses the opportunity to find new drugs and chemicals. "Every time we lose a species, we lose an option for the future," says Sir Ghillean Prance, director of Kew Gardens in London. "We lose a potential cure for AIDS or a virus-resistant crop. So we must somehow stop losing species, not just for the sake of our planet but for our own . . . needs and uses."

We also need natural ecosystems to provide essential services on which all living things depend. The production of oxygen, the purification of water, the filtering of pollutants, and the prevention of soil erosion are all vital functions performed by healthy ecosystems.





Insects provide pollination services. Frogs, fish, and birds control pests; mussels and other aquatic organisms cleanse our water supplies; plants and microorganisms create our soils. The economic value of all these services is immense. A conservative estimate of the monetary benefits of biodiversity worldwide is around 3,000 billion dollars per year, at 1995 prices.

Despite our dependence on the diversity of life, however, the world seems to be in the midst of an extinction crisis that has threatened the intricate web of life. Now at a time when we are beginning to understand the vital role of biodiversity, humans are causing more extinctions than ever before! Is man, though, in a position to solve the problem? What does the future hold for the variety of life on earth?

Life Hiding in the Forests

The forests of our planet are teeming with life, including species that have yet to be discovered by man. Ecological scientist John Harte observed: "Tropical rainforests cover less than two percent of the planet and yet are the only home of at least 50 percent and possibly as many as 90 percent of all species on earth. The higher estimate is based on the assumption that a large share of the to-be-discovered species will be tropical because biological exploration of the tropics is so fragmentary. Other habitats are also poorly explored, though, and undoubtedly contain numerous species unknown to science today. Among these are the soils of temperate forests, such as the moist old-growth forests in the Pacific Northwest of the United States."

Who can tell what surprises await man if he ever gets a chance to explore the life hidden in the forests?



What Does the Future Hold?

MAN is only part of the big picture. All creatures on earth have their place, according to their God-given role. We share many things with the life-forms around us—above all, the miracle of life itself. For this reason, many people cannot help but feel a powerful sense of loss when a life-form vanishes.

Scientist Anthony C. Janetos, writing in *Consequences* magazine, stated: "Many would agree that as a society we bear the ethical obligation to protect the habitability of the planet, and to act as responsible stewards of its biological riches for the present and future welfare of the human species. To do that requires an appreciation of the value of biodiversity—both what it provides for

the natural world and the ways we can use it—and a commitment to preserve it."

What Is Being Done?

Indeed, global concern over the loss of living resources has brought representatives from governments and other agencies together to draft a Convention on Biological Diversity. This comprehensive agreement recognizes that the conservation of biodiversity is a common concern of all people.

As a further step to understanding biodiversity, biologists, ecologists, and other scientists around the world have declared 2001-2 to be International Biodiversity Observation Year (IBOY). Diana Wall, a biologist at Colorado State University who chairs the IBOY, states: "Exploring biodiversity



will unlock many benefits through discovery of new genes and chemicals that can be used for drugs, to improve crops or to restore polluted land." Wall adds: "More importantly, learning where new species are, their role in maintaining healthy ecosystems and how we can conserve them is vital for making informed decisions about our land, rivers and oceans."

Fundamental Changes Needed

Although some commendable progress has been made, such efforts have mainly addressed symptoms rather than causes. According to researchers, at this point man does not have the luxury of ample time. As Ruth Patrick, of the Academy of Natural Sciences of Philadelphia, Pennsylvania, U.S.A., contemplated what she termed "the potential biodiversity depletion," she concluded that "time is of the essence . . . Incisive and urgent action is at a premium." To reverse the trend toward extinction, there needs to be an urgent restructuring of the way man treats this planet and the living things on it. More than damage control is required. "The problems of conserving biological diversity therefore cannot be separated from the larger issues of social . . . development," declares the World Resources Institute.

Achieving such a goal would require nothing less than a fundamental change in human society. The book *Caring for the Earth* acknowledges that responsible stewardship requires "values, economies and societies different from most that prevail today."

The Bible clearly shows that humans are simply not equipped to bring about such changes. Jeremiah 10:23 says: "I well know, O Jehovah, that to earthling man his way does not belong. It does not belong to man who is walking even to direct his step." (Proverbs 20:24) This truth has certainly been made manifest throughout the course

of history, and the results of man's ignoring this principle have brought us face-to-face with the "critical times hard to deal with" that are spoken of at 2 Timothy 3:1-5. This series of verses also shows us that the critical times are caused by the wrong thinking of people. Therefore, until *people change*, any solutions to the problems we face are at best temporary.

World-renowned scientist Dr. Jane Goodall observed in an interview that habitat destruction "is often tied up with economic greed and materialism in the developed world." And botanist Peter Raven, former secretary of the U.S. National Academy of Sciences, warned that "ignorance, indifference, poverty and greed are producing inter-related problems that threaten to radically alter Earth for the worse." Thus, some of the values that need to change include selfishness, greed, ignorance, shortsightedness, and self-centeredness.

The Ultimate Protection of Biodiversity

Understandably, the Creator of life in its staggering variety is keenly interested in the future of his creation. The Bible tells us that God will soon take action by 'bringing to ruin those ruining the earth.'—Revelation 11:18.

Will God bring back life-forms that have become extinct because of man's ruining the earth? If the Creator wishes to have extinct animal species reappear on the earth, he can certainly recreate them in the future. The same would apply to the extinct vegetation. But since the Bible does not tell us, it would not be wise to speculate on the matter.

What God's rule does guarantee is a blessing for every living thing on earth. "Let the earth be glad," says the psalmist. "Let the sea resound, and all that is in it; let the fields be jubilant, and everything in them. Then all the trees of the forest will sing for joy." —Psalm 96:11, 12, *New International Version*.

Why Read Aloud to Your Children?

"She came to me, crawled upon my lap dragging behind her a dog-eared book of pages smeared with . . . peanut butter, and suggested . . . , 'Help me read it, Daddy; help me read it.'"

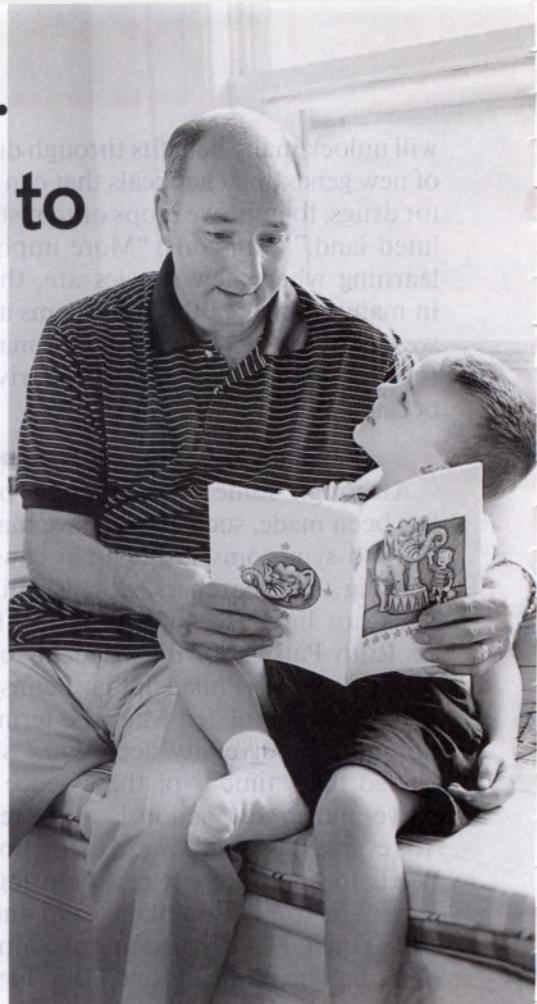
—Dr. Clifford Schimmels, professor of education.

CHILDREN—they learn so quickly. Research shows that rapid brain development occurs in children younger than three years of age. Everyday parental activities such as reading, singing, and being affectionate can play a crucial role in a child's healthy development. However, according to one study, only about half of all parents of children between the ages of two and eight read to their children daily. You may wonder, 'Does reading to my child really make a difference?'

Engendering a Love of Reading

Experts suggest that the answer is yes. "The single most important activity for building the knowledge required for eventual success in reading is reading aloud to children. This is especially so during the preschool years," says the report *Becoming a Nation of Readers*.

While listening to stories read from a book, children learn at a young age that the letters on the page correspond to the words in our spoken vocabulary. They also become familiar with the language in books. "Every time we read to a child, we're sending a 'pleasure' message to the child's brain. You could even call it a commercial, conditioning the child to associate books and print with pleasure," notes one handbook on reading aloud. Parents who foster this love of books will cultivate in their children a life-long desire to be readers.



Helping Them Understand the World Around Them

Parents who read aloud to their children can give a valuable gift—a knowledge of people, places, and things. With relatively little expense, they can "travel" the world through the pages of books. Consider the example of two-year-old Anthony, whose mother has read to him since birth. She says: "His first visit to the zoo was a journey of rediscovery." Rediscovery? Yes, although Anthony was seeing zebras, lions, giraffes, and other animals in the flesh for the first time, he had already been introduced to these creatures.

His mother further explains: "Anthony has made joyful acquaintance with countless people, animals, objects and ideas, all between the covers of books, in his first two years of life." Yes, reading aloud to children when they are young can contribute much to their understanding of the world in which they live.

Building a Close Relationship

During the formative years, young children develop attitudes that will influence their actions in the years to come. Parents thus need to lay the foundation for a close relationship marked by confidence, mutual respect, and understanding. Reading can be instrumental in this process.

When parents take the time to hold their children in their arms and read to them, the message is clear: "I love you." Phoebe, a mother in Canada, said of reading to her son, now eight years old: "My husband and I feel that this has contributed greatly to Nathan's feeling close to us. He is open with us and often tells us what he is feeling. It has created a special bond."

Cindy has made it a habit to read aloud to her daughter since she was

about a year old and alert enough to sit and listen for a minute or two. Has it been worth all the time and effort? Cindy observes: "The friendly, nonthreatening environment of reading together is often all that is needed to move Abigail to tell us about some incident at school or some problem with a friend. What parent isn't eager for that response?" Assuredly, reading aloud can contribute to a close bond between parent and child.

Inculcating Important Life Skills

"Our children today ingest so much mental garbage, from television and other sources, that they need, more than ever, some mental *nourishment*, some clear thinking, some *wisdom*, some mental moorings that will help them live up to their values and see their lives in proper perspective," says the book *3 Steps to a Strong Family*. Parents are in the best position to provide a positive and wholesome influence.

Exposure to complex and well-structured sentences found in books can be a positive tool for teaching a child to express himself both in speaking and in writing. Dorothy Butler, author of *Babies Need Books*, says: "The quality of an individual's thought will depend upon the quality of his language. Language is, indeed, in the center of the stage as far as learning and intelligence are concerned." The ability to communicate well is the lifeblood of good relationships.

Reading from appropriate books can also reinforce good morals and values. Parents who read and reason with their children can help them to develop problem-solving skills. As Cindy read with her daughter Abigail, she carefully observed Abigail's reaction to situations

Photograph taken at the Wildlife Conservation Society's Bronx Zoo



presented in stories. "As parents, we can learn more about subtle traits in her personality and hopefully help her head off improper thinking at a very early stage." Indeed, reading aloud with children can educate both the mind and the heart.

Make Reading a Pleasure

Read "with a light touch," keeping the atmosphere relaxed, informal, and enjoyable. Perceptive parents know when to stop reading. Lena says: "Sometimes Andrew, who is two years old, is very tired and doesn't sit still for very long. We shorten our reading schedule to accommodate his mood. We don't want Andrew to have any negative feelings about reading, so we don't force it on him for longer than he can take."

Reading aloud involves so much more than merely vocalizing what is printed. Know when to turn the page of a picture book so as to build suspense. Keep pace with the flow of the text. Voice modulation and sense stress can also contribute much to the story. The warmth in your voice can instill a feeling of security in your child.

The benefits are greatest when your child is an active participant. Pause periodically, and ask open-ended questions. Expand on your child's answers by offering alternative possibilities.

Be Selective in Your Choice of Books

Perhaps the most important factor, though, is to choose good books. Doing so requires a little homework. Carefully screen books, and stick to those that have a positive or instructive message and a good moral to the story. Take a close look at the cover, the artwork, and the general style. Select books that are interesting to both parent and child. Often children will ask for the same story to be read again and again.

Parents the world over have especially appreciated *My Book of Bible Stories*.^{*} It was designed for parents to read with their young children, and it can not only help children to become good readers but also stimulate their interest in the Bible.

Parents who read aloud to their children can engender in them good reading habits, which may bring meaningful results throughout life. JoAnne observed regarding her daughter: "Not only did Jennifer learn to read and write before going to school and acquire a love for reading but, more important, she has developed a love for our Grand Creator, Jehovah. Jennifer has learned to rely on his written Word, the Bible, to guide her in all her decisions." Truly, what you help a child to love can be more important than what you help him or her to learn.

* Published by Jehovah's Witnesses.



When Reading to Your Child

- Begin when he or she is still an infant.
- Allow your child time to settle down to reading.
- Read stories you both like.
- Read as often as you can and with feeling.
- Involve your child by asking questions.



ITALIAN CAMEOS

Miniature Masterpieces

BY AWAKE! WRITER IN ITALY

We have come to Torre del Greco, on the Bay of Naples, to see the production of one of the handmade art objects typical to this part of Italy. We are talking about cameos—jewelry carved from seashells. We plan to visit one of the town's many cameo workshops, but before we start, perhaps you would like to learn a little about cameos and their long history.

CAMEOS are gems, hard stones, or shells that are carved in relief. Agate, onyx, sardonyx, and certain conchs are especially suited to this kind of work, as their layers of different colors make it possible to obtain pleasing contrasts. The technique employed is said to be like that of relief sculptures but in miniature.

Many cameos in hard or precious stones have survived from Persian and Greco-Roman times, testifying to their popularity in antiquity. Shell cameos are more recent. Mother-of-pearl was worked in France, Germany, and Flanders during the 14th and 15th centuries. Artifacts in shell seem to have been highly appreciated at the opulent and sophisticated French courts. Voyages of discovery made during those years led to the influx into Europe of rare and exotic materials—giant tortoiseshells, narwhal tusks, jade, amber, and strange seashells. This aroused interest in natural history and stimulated the imagination of able artisans, jewelers, and engravers. Likely during the 16th century, conchs of the Cassidae and Cypraeidae families were found to be particularly suitable for cameo engraving.

**Shells from which
cameos are produced**



**The cup is cut out to
make the cameos**



**The shape of the cameo
is marked on the piece**



**The piece is cut to
roughly the right size**



The so-called neoclassic period saw a revival of interest in ancient art, and during the 18th century, shell cameos prospered, despite being frowned upon by some as imitations because of the inferior value of shell compared with that of gemstones. Since then the number of centers producing cameos has declined. The art now survives in two towns—Idar-Oberstein, Germany, which specializes in machine-worked agates, and Torre del Greco, Italy, where shell cameos continue to be fashioned by hand.

Now that we have a little background information, let us go and see how modern shell cameos are made.

In the Cameo Workshop

The workshop we will visit is in a narrow street in the center of Torre del Greco. The craftsman's workbench is cluttered with tools and cameos at various stages of completion. We gasp at the beauty of the piece he is finishing—a complex pastoral scene containing several figures.

The shells from which cameos are produced arrive from the Bahamas as well as from places in the Caribbean and the waters off East Africa. Different types of shells produce different colored cameos. For example, those carved in *Cassis madagascariensis* (commonly known

MAKING THE CAMEO

**After shaping the
piece, the workman is
busy at his bench**



as sardonyx shell) have a white design on a dark-brown background; those in *Cypraea casis rufa* (carnelian shell) exhibit lighter and darker shades of reddish-brown. The most valuable are those with the greatest color contrast.

The first step is to cut out the cup—the part of the shell that will be used—with a water-cooled cutting disc. The shapes of the cameos to be produced, usually oval or round, are marked on the inner surface of the cup, which is then roughly cut into smaller polygonal pieces. Usually only one large and two smaller cameos can be produced from the average shell. A trained eye is required to discern each shell's potential, that is, if it should be cut in one way or another. Three protuberances on the outer surface of a piece, for example, may offer the possibility of carving three figures. Once cut, each piece is brought to the desired shape at a grinding wheel. It is then stuck onto a short wooden stick, making it easier to handle, and its rough outer layer is ground down to the right thickness. At this point the artist allows the form of the piece to inspire his choice of subject. He makes a quick pencil sketch on its surface and begins to carve.

An electric mill—a drill with an abrasive bit—is used to eliminate the excess material. When the design has been essentially roughed out, hand engraving begins with a series of different-size and extremely sharp tools called burins. The design has to be realized at exactly the depth that the shell changes color from light to dark. By cutting to varying depths, the skillful artist can produce the impression of transparent veils. At last, an exquisitely detailed figure stands in relief against the background of the darker layer beneath!

The range of possible subjects is endless. Perhaps you have seen the graceful lady in profile—always a favorite. Tiny profiles or flowers are set as rings



Gemma Augustea, made between 10 C.E. and 20 C.E. Its size is 7 ½ inches by 9 inches

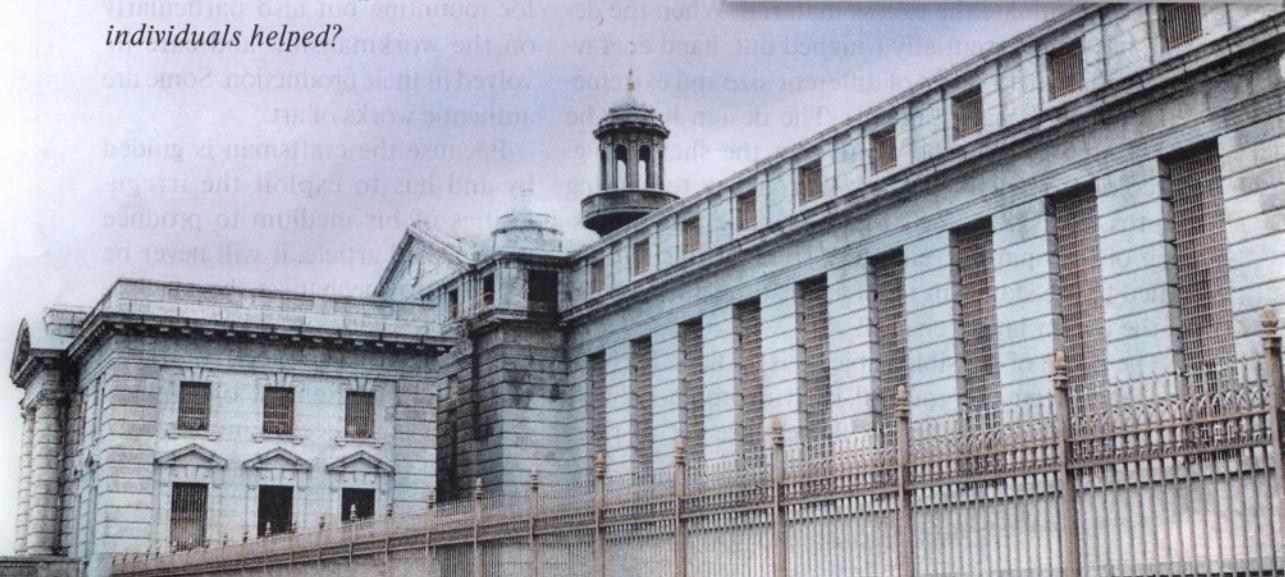
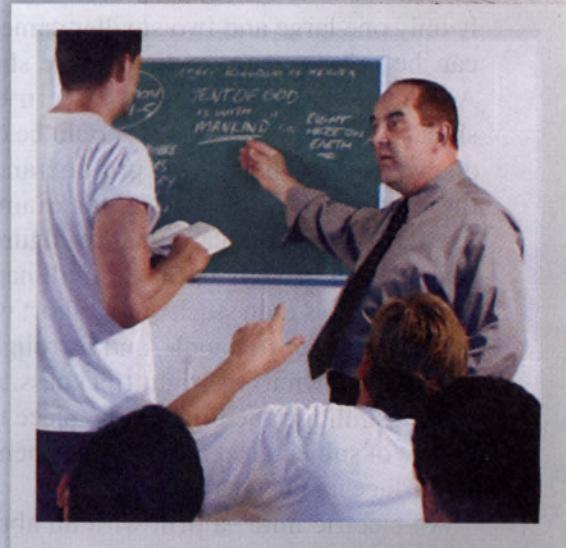
Erich Lessing/Art Resource, NY

or earrings. Larger cameos, measuring up to about three inches, are used for brooches or pendants and can portray more complex subjects—landscapes and pastoral or classical compositions. The largest, reaching a maximum of perhaps eight inches, may be framed or mounted on pedestals. Their value depends not only on size and materials used for mounting but also particularly on the workmanship and care involved in their production. Some are authentic works of art.

Because the craftsman is guided by and has to exploit the irregularities of his medium to produce the finished article, it will never be possible to mechanize the production of shell cameos and no two will ever be identical. They are indeed unique and delightful ornaments—true masterpieces in miniature.

STORIES OF FAITH *From a* HISTORIC PRISON

Around the world, volunteers among Jehovah's Witnesses visit penal institutions in order to assist inmates who sincerely want to draw close to God. For more than 20 years, we have successfully conducted such a Bible educational program in the federal penitentiary in Atlanta, Georgia, U.S.A. Studying the Bible in a prison environment is challenging. As volunteer ministers, we have dealt with bank robbers, extortioners, murderers, drug dealers, con artists, and sex offenders. How are such individuals helped?



FIRST, you may be interested to learn when and how Jehovah's Witnesses originally entered this prison. It was July 4, 1918. A group of eight distinguished Christian ministers were escorted up the 15 granite steps of this federal penitentiary. If the common practice of the time was followed, they were handcuffed to "belly-chains," with their legs shackled. The newcomers were spiritually qualified men who took the lead among the International Bible Students, as Jehovah's Witnesses were then known. Those men could not have guessed that it would take less than a year to establish that their imprisonment was a gross miscarriage of justice. In March 1919, the eight Witness ministers walked down those same prison steps, unshackled and free. They were later exonerated when the authorities decided to withdraw the prosecution.*

During their imprisonment in Atlanta, those Christian men conducted Bible study classes. One of the eight inmates, A. H. Macmillan, later reported that the deputy warden was hostile at first but was finally moved to exclaim: "Those lessons you are having there [with the prisoners] are wonderful!"

Today, over 80 years later, productive Bible study classes continue to make lasting impressions on individuals in that very prison. On several occasions prison officials have singled out members of our team for special recognition and honorary awards. The effectiveness of Jehovah's Witnesses' educational programs has also been featured in *Volunteer Today*, a national newsletter published by the U.S. Department of Justice, Federal Bureau of Prisons.

One of the benefits of the program of Bible study with inmates is a remarkable

improvement in their conduct. As a result, some have gained an earlier release from prison. Cynical observers might assume that convicts only study the Bible with us for such a reason. While that has been true in a few cases, our experience has often shown otherwise. We are thrilled again and again to learn that our students are still maintaining good Christian conduct many years after their release from prison. The following are a few of the many experiences we have enjoyed behind the towering walls of this historic facility.

Immigrant Inmates Find Hope

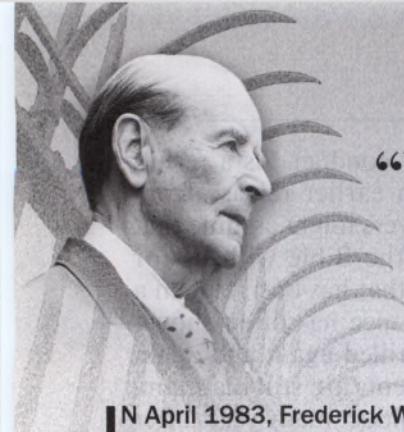
In the early 1980's, those of us preaching in the Atlanta penitentiary enjoyed the privilege of assisting many immigrant prisoners. Some of the transformations were extraordinary.

Raoul* started out as a truly dangerous inmate. He and a friend were career criminals serving time for murder. They were particularly violent, according to the elders who helped them. Raoul had mortal enemies. One man had vowed to kill Raoul, and Raoul had vowed to do the same to him. Raoul was terrified when his archenemy was transferred to Atlanta. It seemed only a matter of time before these two longtime foes would cross paths in the yard, the cafeteria, or the cell block. However, after studying the Bible with Jehovah's Witnesses, Raoul made dramatic changes in his thinking, manner, and appearance. When the two men finally did pass each other in the prison yard, Raoul's archenemy did not even recognize him! The bloody confrontation that had seemed inevitable never materialized.

When Raoul decided to symbolize his dedication to God by baptism, a suitable water container had to be found. The prison chaplain came to the rescue, providing a

* For a detailed account of that case, see *Jehovah's Witnesses—Proclaimers of God's Kingdom*, pages 647-56, published by Jehovah's Witnesses.

* Names of prison inmates have been changed.



"You Have Entertained Some of My Very Best Friends"

In April 1983, Frederick W. Franz, who then served on the Governing Body of Jehovah's Witnesses, visited the U.S. penitentiary in Atlanta. He had been quite anxious to visit this particular prison. As he entered the building, he loudly exclaimed to the guard seated at the desk in the foyer: "I want you to know that you have entertained some of my very best friends here!" The guard looked puzzled, to say the least. What was Franz talking about?

It was 64 years earlier that Joseph F. Rutherford and his seven associates were falsely convicted of conspiracy. Rutherford and Franz later became close friends and workmates. Now, over 40 years after Rutherford's death—and when he himself was about 90 years of age—Franz was delighted to visit the scene of his friend's imprisonment so long ago. No doubt he thought about the work that Rutherford and his associates had done within those walls. What was that?

Shortly after Rutherford and his associates arrived, the deputy warden told them: "We are going to give you some work to do. Now, what can you do?"

"Deputy," answered A. H. Macmillan, one of the eight, "I've never done anything in my life but preach. Have you got anything like that here?"

"No, sir! That's what you are in here for, and I tell you now you are not doing any preaching here."

Several weeks passed. All the prisoners were required to at-

black coffin as a baptismal tank. The coffin was filled to the brim with water. But Raoul seemed larger than the coffin. So two elders had to work together to ensure that Raoul was entirely immersed, as the Bible requires. (Luke 3:21, footnote) Today Raoul is a free man and continues to serve as a zealous Christian minister.

In 1987 a ruling to deport many immigrant inmates led to a destructive and fiery rampage in the prison that made international news. Hostages were taken. What few people know, however, are the stories of courageous immigrant prisoners who put their lives on the line by refusing to join in the explosive and violent revolt. They were students of our Bible study classes. These men, who were once quick to fight to the death, remained neutral—no part of the violence and vandalism. What an elo-

quent testimony to the Bible's power to transform even brutal criminals into peace-loving Christians!—Hebrews 4:12.

Finding Forgiveness

Another memorable experience was that of James. He had been one of Jehovah's Witnesses but had allowed himself to grow weak spiritually. He succumbed to temptation and committed bank fraud. He was disfellowshipped from the Christian congregation and imprisoned in the Atlanta federal penitentiary. He later told us: "It was by far the lowest point in my life."

Life in prison was hard. "I suffered terrible feelings of isolation and despair," James recalled. However, his incarceration in a cramped prison cell led him to do some serious soul-searching. He described it this way: "What hurt me most in prison was not my personal discomfort but the way I had

tend chapel service on Sunday, and as many as desired could remain for Sunday school afterward. The eight men decided to form their own Bible study class, which they took turns conducting. "Some curiosity seekers began to come, and still more came," Rutherford later explained. Soon the little group of 8 grew to 90!

How did the prisoners respond to the Bible study class? One prisoner said: "I am seventy-two years of age, and I had to get behind prison bars in order to hear the truth. I am glad for this reason that I was sent to the penitentiary." Another remarked: "My time is about to expire; I am sorry I have to leave . . . Can you tell me where I can find some peo-

ple like you when I go away?"

The night before the eight men were released, they received a touching letter from a young man who had attended their class. He wrote: "I want you to know that you have left with me a desire to be a better, bigger man, if such can emerge from a carcass so soiled and world-worn as mine. . . . I'm weak, very weak, no one knows this better than I, but I'll try and I'll fight with myself if necessary, to achieve the full fruits from this seed you have planted, so I may help not only myself but those about me. This may all sound odd, com-

ing from such as I, but deep, way deep in my heart I mean it, every word."

Today, well over 80 years later, seeds of Bible truth are still being sown by Jehovah's Witnesses in the Atlanta penitentiary—as well as in many other prisons.—1 Corinthians 3:6, 7.



let my heavenly Father down." After several months one of the inmates who was studying the Bible with the Witness volunteers approached James and invited him to attend the Bible study classes. Ashamed, James refused at first. But the young man persisted, and eventually James attended a Sunday meeting.

He was deeply moved to see the loving concern for the students shown by the Witnesses conducting the class. Later something else struck him. Because of prior experiences, James had assumed that all religious volunteers were well paid for their work with inmates. But to his surprise he learned that the Witnesses submitted no invoices and received no cash payments for their services.—Matthew 10:8.

James began to look forward eagerly to the meetings. He found the brothers who

conducted those meetings to be kind and encouraging. One elder in particular impressed him. "I counted the days until his next visit," James recalls, "because he made the truth of God's Word come alive; his spirit was infectious. He impressed on me the need to read the Bible analytically in order to get the true sense of the message—to make it truly my own and, more important, to develop the mind of Christ."

James had a hard time believing that God could forgive his mistakes. What helped him? "God's forgiveness was reflected in the treatment we received from faithful and self-sacrificing men.* One thing became very clear: In spite of my terrible sins, the

* The Watchtower of April 15, 1991, encouraged Christian elders to make merciful calls on many of the individuals disfellowshipped from the Christian congregation. The purpose of such would be to encourage them to return to Jehovah.—2 Corinthians 2:6-8.

brother never gave even the slightest impression that God could not forgive me. Jehovah never let me go. He saw my heartfelt repentance and my repudiation of such a foolish and fraudulent course; and he has richly blessed me." Indeed, James was reinstated into the Christian congregation. Released from prison about a decade ago, he has remained active and zealous. To the delight of his wife and family, he is now a ministerial servant and recently gave his first public talk.

Finding the Way

We met Johnny in the early 1990's. His family had some connection with Jehovah's Witnesses, but none were spiritually strong during Johnny's formative years, when he needed spiritual and moral guidance. Johnny drifted into a life of crime. He was sentenced to serve in the federal prison camp adjacent to the Atlanta penitentiary. During his term in the camp, he learned of our Bible study classes and decided to attend.

At first, Johnny could barely read. However, he was so eager to take in more knowledge about Jehovah and Jesus Christ that he was determined to learn to read proficiently. (John 17:3) Our study classes often help inmates in this regard, especially when it comes to reading comprehension and public reading. Johnny worked so hard at his studies that his fellow students began to look up

to him as an example of what a serious Bible student should be.

Many months later Johnny was transferred to the federal facility in Talladega, Alabama, to attend one of its educational programs on drugs. Upon his arrival, he quickly got involved in the Christian meetings of Jehovah's Witnesses that were held there. He maintained an active role until he was finally released. And when that happy day arrived, Johnny wasted no time in contacting the Witnesses in his small hometown. He was warmly received and continued to study and make spiritual progress.

Johnny's enthusiasm and love for Bible truth has also encouraged his mother to become more involved in congregation activities. He is a great source of strength and practical help to her. Recently he was baptized in symbol of his dedication to Jehovah God, and he continues to have an active share in the Christian ministry.

A Bountiful Harvest

During the past two decades, more than 40 inmates at the Atlanta penitentiary have been helped to become baptized ministers of Jehovah's Witnesses; more than 90 other inmates have also benefited from weekly Bible studies. Other prisoners have been baptized after being released from prison or moving to other prisons.

Those of us who visit this historic prison week after week to assist truly penitent inmates are thankful to serve in this unique Christian ministry. (Acts 3:19; 2 Corinthians 7:8-13) In a grim setting of gun towers, guards, electric gates, and gleaming coils of razor wire, we have been filled with joy and awe to see federal criminals turning their lives around and becoming honest citizens and faithful worshipers of God.—1 Corinthians 6:9-11.—Contributed.

IN OUR NEXT ISSUE

Hope for Arthritis Sufferers

Fêng Shui—Is It for Christians?

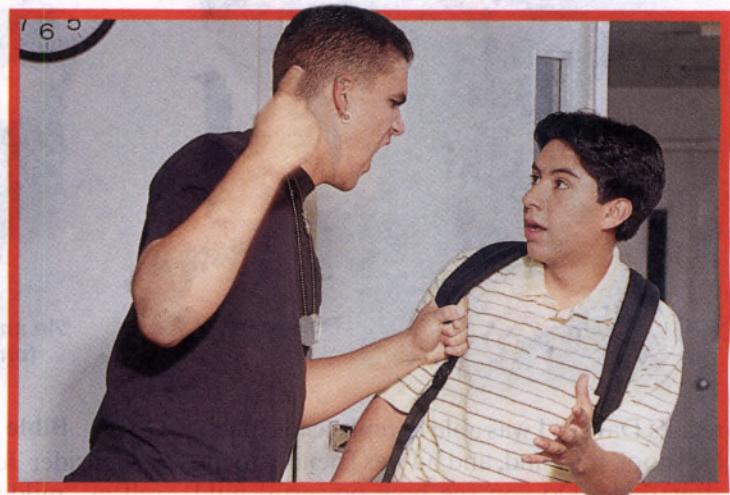
Colporteurs

—The Walking Bookstores

YOUNG PEOPLE ASK . . .

"He was raging mad. I guess because he saw that I was little, he wanted to beat me up. As I was backing away, I said: 'Hold on for a second! Wait a minute! Wait a minute! Why do you want to beat me up? I haven't done anything to you. I don't even know what you are mad about. Can we talk about it?'"

—16-year-old David.



HAVE you ever been the target of a bully's rage? The Bible predicted that people today would be "fierce, without love of goodness." (2 Timothy 3:3) And while you may have done all you can to avoid "companionship with anyone given to anger . . . , having fits of rage," there may be times when you simply cannot escape angry people. (Proverbs 22:24) How should you respond when you find yourself in such a situation?

Responding to Rage

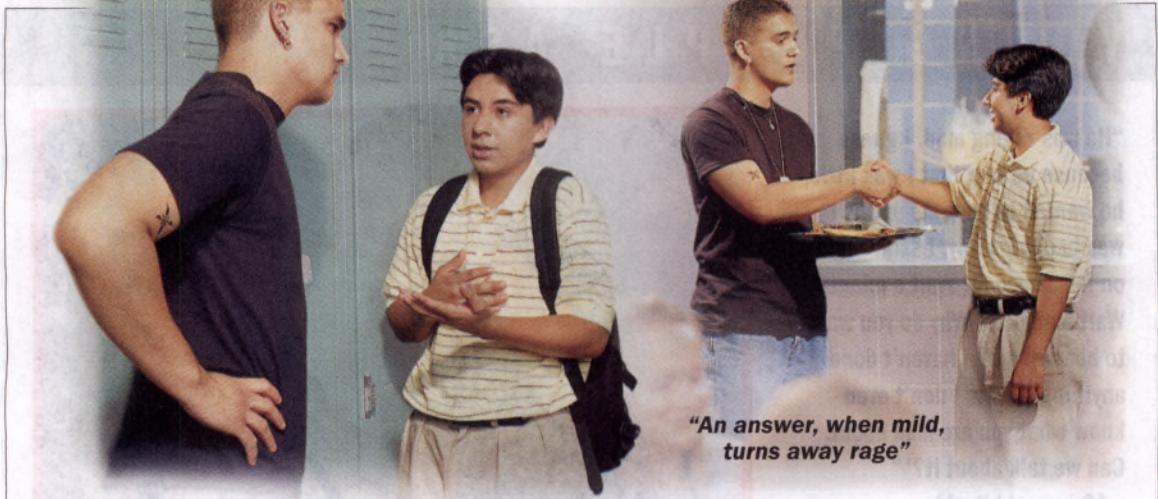
Today many youths might respond by displaying rage of their own. But doing so simply causes more pain. Furthermore, losing your own control would bring you down to the level of the one raging. Proverbs 26:4 says: "Do not answer anyone stupid according to his foolishness, that you yourself also may not become equal to him." Young Jeremy learned the truth of these words the hard way. He recalls sitting at the lunch table in school: "There was a group of boys that would always make fun of one another and other people. Very often they would talk

How Do I Deal With Angry People?

about me. I generally ignored their talk. However, when one of them started talking about my mother, I lost control and flew at him in a fit of anger." The result? "He beat me up good," says Jeremy.

The Bible gives this wise advice: "An answer, when mild, turns away rage, but a word causing pain makes anger to come up." (Proverbs 15:1) Yes, responding to anger with "a word causing pain" only aggravates the situation. However, a mild reply can often calm things down and defuse a tense situation.

Recall David, mentioned at the outset. He was able to talk the bully into explaining why he was angry. It turned out that someone had stolen the bully's lunch, and he was simply taking out his frustration on the first person who came his way. "Beating me up is not going to replace your lunch," David reasoned. He then suggested that they both go over to the cafeteria. "Since I knew the clerk there,"



*"An answer, when mild,
turns away rage"*

recalls David, "I was able to replace his lunch. He shook my hand, and he was friendly to me after that." Do you see how powerful mild words can be? As a proverb puts it, "a mild tongue itself can break a bone."—Proverbs 25:15.

Mildness—Weakness or Strength?

Granted, the idea of having "a mild tongue" may not sound appealing. It may seem more tough or macho to fight anger with anger. You may even fear that if you are mild, others will think you are really weak. But just what does it mean to be mild? According to one reference work, to be mild means to be gentle. However, this same source adds: "Behind the gentleness there is the strength of steel." Thus, far from being a sign of weakness, mildness can be a sign of strength. How so?

Well, for one thing, a mild-tempered person is in control and is not easily thrown off balance. On the other hand, a person who lacks mildness seems insecure, frustrated, or even desperate. He also lacks self-control. Unable to control his emotions, he is likely to find himself being repeatedly drawn into conflicts. Yes, "as a city broken through, without a wall, is the man that has no restraint for his spirit." (Proverbs 25:28) Really, then, it is the mild-tempered person who is strong!

Bible Examples of Mildness

Consider Jesus Christ. He described himself as "mild-tempered and lowly in heart." (Matthew 11:29) He never became harsh or unreasonable, paying back injury for injury. In fact, the apostle Peter, a personal friend of Jesus', reported: "When [Jesus] was being reviled, he did not go reviling in return. When he was suffering, he did not go threatening, but kept on committing himself to the one who judges righteously." (1 Peter 2:23) Remember, though, that this same Jesus "entered into the temple and threw out all those selling and buying." (Matthew 21:12) And had the need ever arisen for divine backing, Jesus could have called on "more than twelve legions of angels"! (Matthew 26:53) No, he was hardly a weakling.

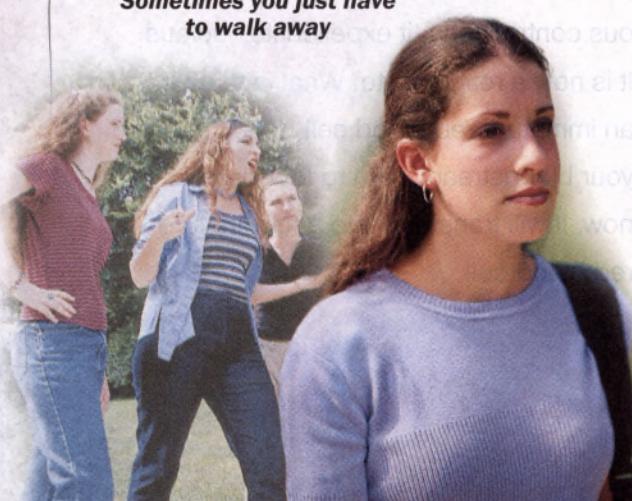
Consider also the example that Judge Gideon set, as recorded in the Bible at Judges 8:1-3. After a great military victory, some soldiers from the tribe of Ephraim were offended because they felt that they had not been given a chance to share in the glory of battle. "What sort of thing is this that you have done to us in not calling us when you went to fight against Midian?" they challenged. "And they vehemently tried to pick a quarrel with him." Now Gideon was a "valiant, mighty one." (Judges 6:12) He could easily have responded

to their provocation with violence. Instead, he gave a mild response that totally disarmed those hotheads. "What now have I done in comparison with you?" asked Gideon. The result of this modest response? "Their spirit calmed down toward him."

Finally, consider the Bible's account of a woman named Abigail. David was hiding as a fugitive from his enemy Saul, the king of Israel. Though suffering exile, David's men often guarded and protected their fellow Israelites. One man whom they helped was Abigail's husband, Nabal, a very wealthy man. However, Nabal was "harsh and bad in his practices." When David's men needed provisions, they asked Nabal for some food. Instead of expressing appreciation for the free protection given him by David's band, Nabal "screamed rebukes" at David's messengers and sent them away empty-handed.—1 Samuel 25:2-11, 14.

On hearing of this, David became angry and ordered his men: "Gird on every one his sword!" David and his men were on their way to kill Nabal and all the innocent male members of his household when Abigail intervened. She greeted David with a generous gift of food and drink. She apologized for her husband's inexcusable conduct and begged David to spare innocent lives.—1 Samuel 25:13, 18-31.

**Sometimes you just have
to walk away**

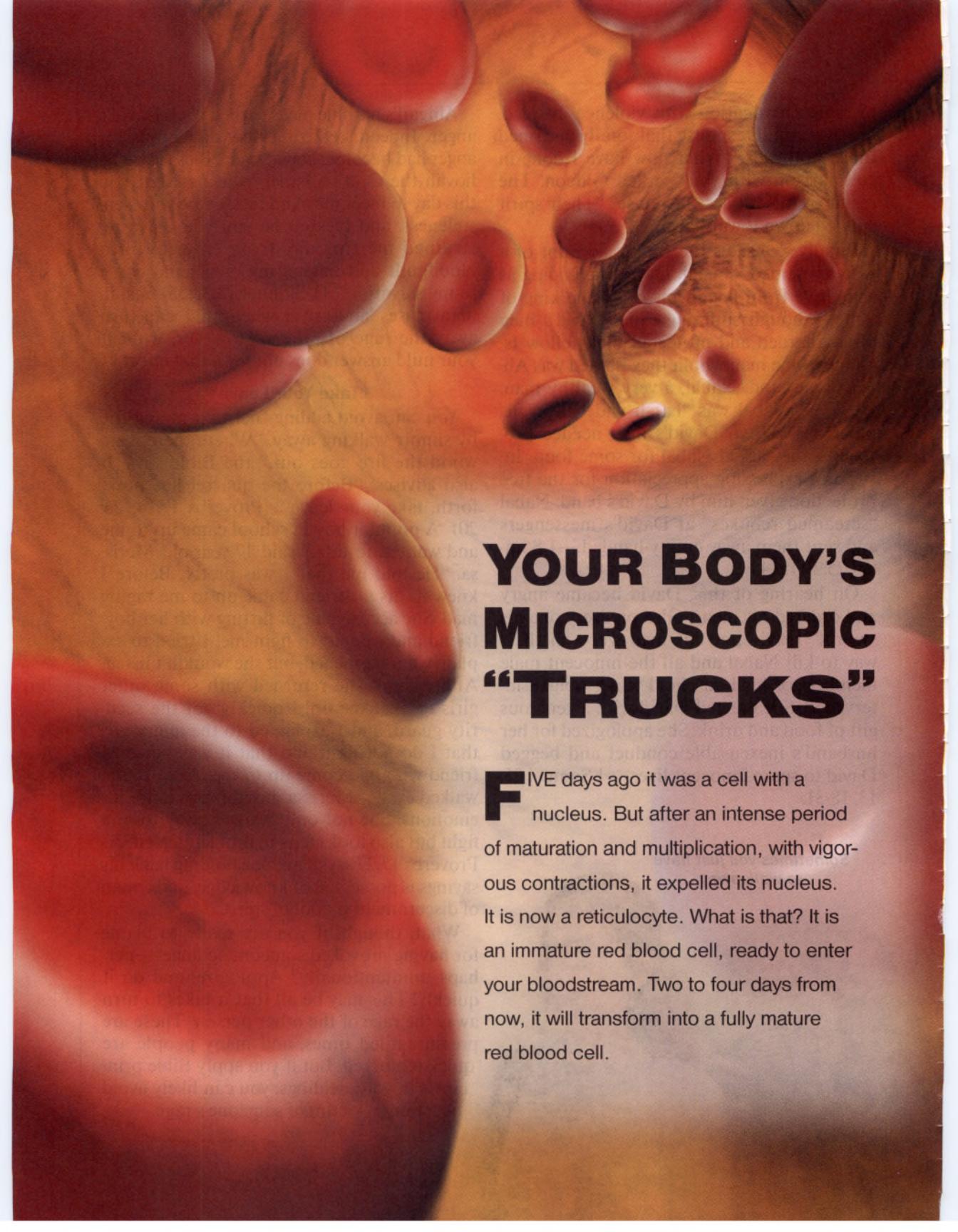


Abigail's humble pleas turned back David's anger. Indeed, realizing how dangerous his anger had become, David said: "Blessed be Jehovah the God of Israel, who has sent you this day to meet me! And blessed be your sensibleness, and blessed be you who have restrained me this day from entering into bloodguilt and having my own hand come to my salvation." (1 Samuel 25:32-35) Yes, in many cases 'an answer when mild' can turn away the rage of others. However, what if your mild answer does not have that effect?

"Take Your Leave"

You can avoid adding fuel to a raging fire by simply walking away. "Where there is no wood the fire goes out," the Bible says. It also advises: "Before the quarrel has burst forth, take your leave." (Proverbs 17:14; 26:20) "A popular boy in school came up to me and wanted to talk," said 17-year-old Merissa. "He told me that I was pretty. Before I knew it, his girlfriend came up to me raging mad. She accused me of flirting with her boyfriend and wanted to fight me! I tried to explain what happened, but she wouldn't listen. After school she returned with some other girls to beat me up! I quickly got the security guard, and I explained to the angry girl that I do not fight and that it was her boyfriend who had come up to me. After that I walked away." Merissa did not give in to her emotions. She not only walked away from a fight but also took steps to protect herself. As Proverbs 17:27 says, "anyone holding back his sayings is possessed of knowledge, and a man of discernment is cool of spirit."

What, though, if you are really to blame for having provoked someone to anger—perhaps unintentionally? Apologize, and do it quickly! This may be all that it takes to turn away the rage of the other person. These are pressure-filled times, and many people are quick-tempered. But if you apply Bible principles in your dealings, you can likely avoid becoming a victim of someone's rage.



YOUR BODY'S MICROSCOPIC "TRUCKS"

FIVE days ago it was a cell with a nucleus. But after an intense period of maturation and multiplication, with vigorous contractions, it expelled its nucleus. It is now a reticulocyte. What is that? It is an immature red blood cell, ready to enter your bloodstream. Two to four days from now, it will transform into a fully mature red blood cell.

This small cell is very much like a truck. Its means of carrying "cargo" is hemoglobin, a protein that transports oxygen. It has been estimated that during its four-month life, the "truck" will travel approximately 150 miles throughout your body. There are about ten billion capillaries (minute blood vessels) in your body, with a combined length of twice the circumference of the earth. Trillions of erythrocytes (red blood cells) are needed to carry oxygen to all parts of the body.

This tiny "truck" is almost always on the move in your bloodstream. Its speed varies according to the circumstances. The cell reaches its top speed of about 50 inches per second when it is in the blood's "superhighway" from the heart—the aorta. As the cell enters the body's "side roads," it gradually slows to an average speed of one hundredth of an inch per second in the terminal capillaries.

Where Blood Cells Come From

In normal adult humans, most blood cells are produced in the bone marrow. Every day, for every pound of body weight, your bone marrow produces one billion red cells, 400 million granulocytes (white cells), and one billion platelets. This compensates for the corresponding daily loss of cells. In a normal adult, millions of red blood cells are destroyed and replaced *every second*.

Now, to enter the bloodstream from the bone marrow, the immature red cell approaches the outer wall of small vessels (sinusoids) in the bone marrow, squeezes through a small aperture called a migration pore, and emerges into the blood. For about three days more, it will go on producing hemoglobin. But then, as a mature red blood cell, or erythrocyte, it will quit that activity.

The Systemic and Pulmonary Circulations

In the 17th century, doctors established that there are two types of blood circulation.

In the *systemic circulation*, your body's microscopic "trucks," the red cells, set out from the heart to the body tissues. There they deliver oxygen and pick up refuse in the form of carbon dioxide. This process is called internal respiration. The red cells then return to the heart. In *pulmonary circulation*, the "trucks" are sent to the lungs. There they unload refuse and reload with oxygen. So pulmonary circulation allows your body to breathe.

When There Aren't Enough Cells

Sometimes there are fewer red blood cells than normal. This is the condition doctors call anemia. It may have different causes, including (1) a defect in the production or maturation of red blood cells, (2) an increase in their destruction, and (3) major bleeding. Anemia may also result from chronic inflammation or tumors.

Problems can result when there is either too much or too little iron in the blood. When there is too little iron, the red cells cannot mature normally. As a result, the cells will be smaller and paler than usual. In many cases, treatment with iron corrects this defect. Sometimes the level of iron in the blood is too high. This can occur when damaged red cells rupture, releasing iron into the system. Progressively, all the body's organs become poisoned. The poisoning of the heart is particularly serious. Patients suffering from this condition almost always succumb to chronic cardiac insufficiency.

Many books would be needed to explain all the work that blood cells do in your body, but it is evident that their marvelous complexity, only partially described here, exalts the wisdom of the One who designed and created life. Of the great and intelligent Creator, one of his ancient worshipers said: "By him we have life and move and exist."—Acts 17:28.

WATCHING THE WORLD

"Snow-Conditioning"

Snow is being used as a new energy source during summer, reports Japan's *Asahi Evening News*. The city of Bibai in Hokkaido, northern Japan, has short, hot summers and plenty of snow in winter. Instead of hauling the snow away, workers pack it in storehouses. Then, during the summer, "air is circulated in a large, snow-packed cold store before being emitted as chilled air like that used for refrigeration," says the newspaper. This chilled air is used to cool buildings that have been equipped with "snow conditioners," specially designed snow-based air conditioning systems. An added benefit is that the snow-filled warehouses have high levels of humidity, which helps to purify the air by absorbing dust particles and odors.

Deadly Drug-Resistant Tuberculosis

"A deadly multi-drug-resistant tuberculosis (MDRTB), which is on the increase, has the capacity to wipe out entire families," reports the Johannesburg *Star* newspaper. "In the next few years it will overtake the number of ordinary tuberculosis (TB) cases" in South Africa. According to the South African National Tuberculosis Association, TB patients can develop MDRTB if they stop taking their medication too soon or if they take it erratically. The more dangerous drug-resistant TB can then be passed on to people who have never had TB. Treatment

of drug-resistant TB is 20 times more expensive than treatment of normal TB and is less successful—half the patients with the drug-resistant strain die. South Africa's TB crisis, says the report, "is spiralling out of control despite the availability of free TB treatment." Two thirds of the population have dormant TB that can easily become activated by the HIV virus.

Is 49 a Dangerous Age?



'Beware, 49-year-olds,' warns *Asahi Shimbun*. More men of this age than any other are being arrested in Japan for murder and attempted murder. Forty-nine-year-olds also rank high in inflicting bodily injury. Next come 47-year-olds, followed by 48-year-olds and then 45-year-olds. Why so many in this age bracket? Men approaching their 50's have reached a crossroads in life, says a Tokyo psychiatrist. "Their children become independent, they have to care for their aging parents and their relations with spouses become difficult," he says. "They are at a stage when their control over impulses is weakened, and some act impulsively even when they can foresee danger." According to the newspaper, housing loans, education fees,

pressures at work, layoffs, and unstable jobs also cause stress in the lives of men in their late 40's.

Memory Loss Linked to Technology?

Some doctors in Japan, the United States, and Britain have begun blaming computer technology, such as electronic organizers and car navigation systems, for severe memory loss in young adults, reports *The Sunday Times* of London. These doctors claim that modern gadgets lead to diminished use of the brain in working out problems, leaving workers, including even those still in their 20's and 30's, unable to remember names, written words, or appointments. Dr. David Cantor of the Psychological Services Institute in Atlanta, Georgia, U.S.A., says: "Many experts believe information overload is making it difficult for some people to absorb new information . . . These people forget things because they were too distracted to absorb them in the first place." Dr. Takanashi Tsukiyama of Tokyo observes that these problems "have nothing to do with age but are related to [your] lifestyle, such as not using your brain enough."

A Serious Public Health Problem

According to government statistics, suicide is the eighth leading cause of death among Americans. More than 30,000 Americans commit suicide annually, and every year

more than 650,000 attempt to take their life. There are more than three suicides for every two murders, says Reuters news service. Both public and private groups refer to suicide as "a serious public health problem." David Satcher, the U.S. surgeon general, says: "There are few who escape being touched by the tragedy of suicide in their lifetimes." Some of the factors associated with suicide include "depression, feelings of hopelessness and helplessness, and alcohol and other drug abuse," reports Reuters.

Bible Illiteracy

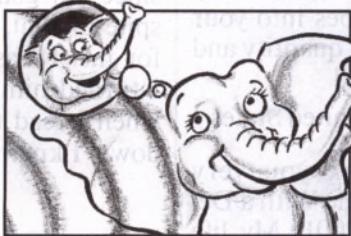
Although the Bible has traditionally been revered in the United States, a recent study found that only 16 percent of professed Christians there say that they read the Bible daily. As reported in *The Sun Herald* of Biloxi, Mississippi, U.S.A., another survey showed that only 2 in 10 people were able to identify the person who delivered the Sermon on the Mount. Additionally, those surveyed could cite only three or four of the Ten Commandments.

Grapefruit Juice and Drugs

Taking prescription drugs with grapefruit juice can increase "the risk of side effects and, in a few cases, [cause] serious reactions," reports the *UC Berkeley Wellness Letter*. The primary drugs involved include some cholesterol-lowering drugs, high blood pressure medications known as calcium channel blockers, and certain tranquilizers. Interestingly, however, not all

people react negatively to the mixture, nor do all grapefruit juices cause the problem. "If you're on medication and drink grapefruit juice," says the *Wellness Letter*, "check with your pharmacist about the possible interaction."

Memory Like an Elephant?



Researchers working in Kenya's Amboseli National Park have found that one of the keys to an elephant herd's survival is the oldest female's memory. "Seniors of the elephant matriarchy, females at least 55 years old, turn out to be far better at telling friends from strangers than . . . 35-year-olds," reports *Science News*. By remembering so-called contact calls, or low-frequency rumbles, senior matriarchs identify unfamiliar calls and herd the group into a defensive huddle. The report says that "a female typically recognizes about 100 peers by their calls." Thus, when poachers kill an older cow, it means the loss of a large storehouse of information for the entire herd.

Number One Killer

"Alcohol kills 55,000 youths per year," reports the French daily *Le Figaro*. According to the World Health Organization (WHO), alcohol is the number one killer of European men aged 15-29 and is a factor

in 25 percent of all deaths. This includes deaths from "intoxication, traffic accidents, suicides, and homicides," says the paper. The situation is particularly bad in some Eastern European countries, where "a third of young men are condemned to die shortly as a result of excessive alcohol consumption." At a conference in Stockholm, Sweden, Dr. Gro Harlem Brundtland, director general of WHO, denounced aggressive marketing by alcohol manufacturers, which makes it increasingly difficult for youths to adopt "a balanced and healthy attitude toward alcohol."

How to Be Happy

"The key to a fulfilling life does not lie in a bulging bank balance. In fact, being rich, popular and influential is the least likely way to find contentment," according to new research by psychologists. Kenneth Sheldon of the University of Missouri-Columbia, in the United States, says: "In Western cultures, many advertisements suggest we should be beautiful, popular and rich. It may make the market work, but those who get sucked into it are not the happiest people." As reported in *The Independent* of London, a study of more than 700 college students revealed that according to the students, "self-esteem" and "being close to others" were the most important factors in their happiness. Money was mentioned least often as a reason for happiness. The belief that "those who think money can't buy happiness don't know where to shop" has been dispelled," says the newspaper.

FROM OUR READERS

History I am writing in regard to the series "What Should We Learn From History?" (March 8, 2001) These were among the most brilliantly written articles I have ever read. I could not put the magazine down until I had completely finished it. I am constantly amazed at the research that goes into your magazine and the never-ending quantity and quality of information presented.

M. C., United States

Debilitating Disease Thank you very much for the article "My Struggle With a Debilitating Illness." (March 8, 2001) My life with interstitial cystitis (IC) began when I was 18. I've always been bothered by the limitations my illness has placed upon me. I have felt that I haven't demonstrated enough endurance, and I have struggled with feelings of unworthiness. Years of pent-up emotion was released after I read this article. Reading that IC also restricted Tanya Salay helped me to get a better perspective on things.

B. Y., United States

When I read articles like this, my own problems fade into the background. I want Tanya Salay to know how proud I am of her and how glad I am that she didn't take her life but relied on Jehovah. Her husband is to be commended as well for his support.

I. W., United States

Thank you so much for articles of this nature. Even if we do not suffer from these problems ourselves, such articles help us to be more understanding of those who do.

C. L., United States

Unrequited Love As I read the article "Young People Ask... How Can I Turn Him Down?" (March 22, 2001), I couldn't help but feel the pain of my own experience. I ignored my feelings, and our marriage was a

disaster. As the article said, "pity is a poor foundation on which to build a marriage."

A. M., United States

A young man asked me to date him, but since our goals were different, I refused. In spite of that, he again declared his feelings for me. I was badly shaken, fearing that if I turned him down, I'd be alone. However, when I read this article, my feelings settled down. I knew my decision was the right one.

S. N., Japan

Three days before I received this article, a young man said to me, "I'd like to get to know you better." I felt torn in two. I was attracted to him but knew that I was too young to date. Now after reading this article and rereading the article "Young People Ask... What if My Parents Think I'm Too Young to Date?" (January 22, 2001), I know what I have to do.

R. S., United States

I thought I was making the right decision when I got engaged. My parents and mature Christian friends advised me that it did not seem I had made the right choice, but I did not pay attention to them. After more than a month, I broke off the engagement. If only I had had the courage to say no before things got so serious, I would have saved myself and my former fiancé a lot of suffering.

V. T., Italy

Circulatory System I recently had an operation on my lymphatic system and was suffering with edema. When I read the article "The Marvels of the Circulatory System" (March 22, 2001), I felt reassured. On the last page of the article, I found an explanation of why such swelling occurs.

M. R., Italy



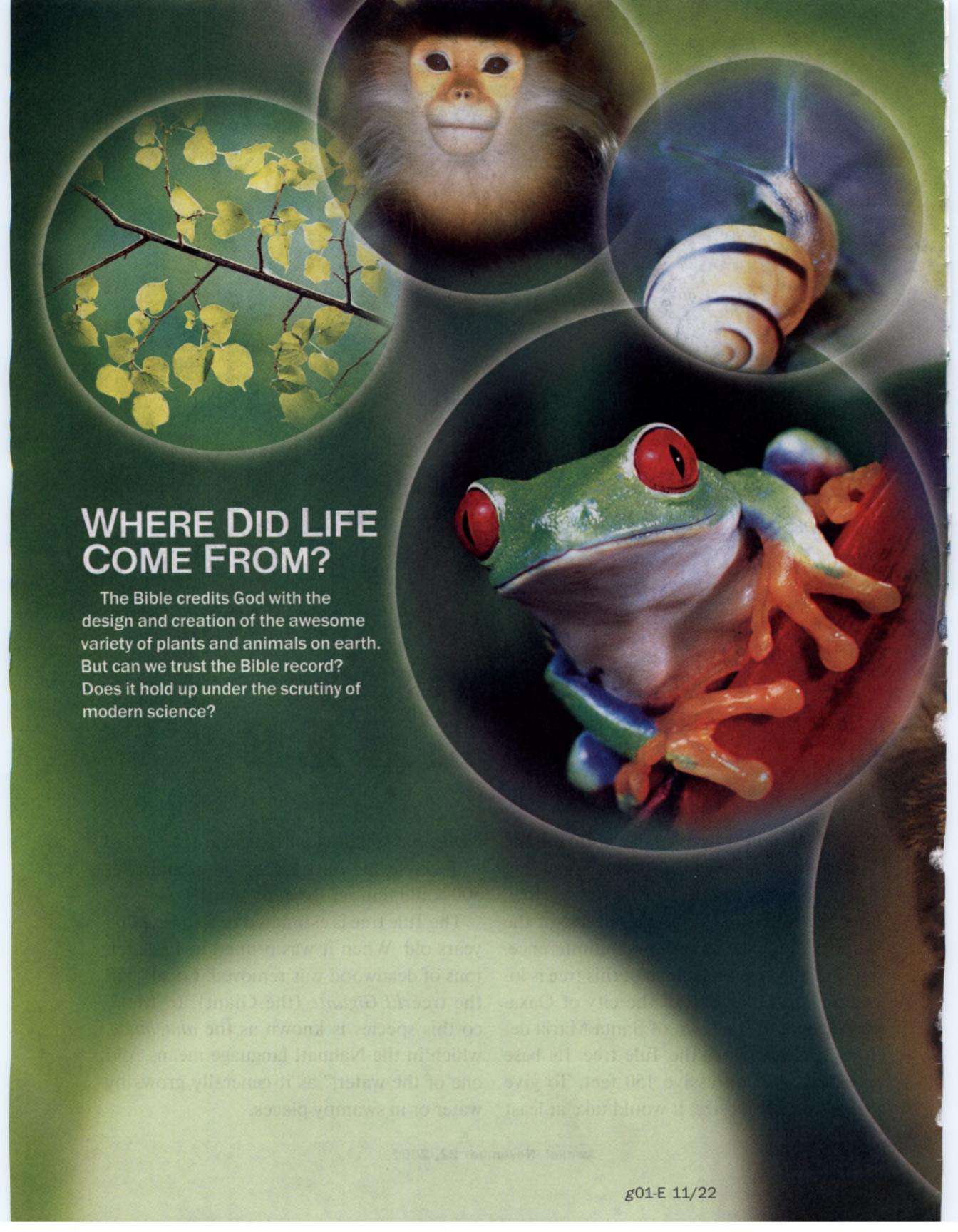
The Impressive TULE TREE

BY AWAKE! WRITER IN MEXICO

THE tallest trees in the world are the redwoods of California, reaching heights of 360 feet or more. However, the Mexican cypress, a relative of the sequoia, holds the record for circumference. The most famous specimen of this tree is located eight miles east of the city of Oaxaca, Mexico, in the town of Santa María del Tule. It is known as the Tule tree. Its base measures an impressive 150 feet. To give you an idea of its size, it would take at least

30 people standing with arms outstretched to encircle the buttressed trunk, and over 500 could find refuge in its shade!

The Tule tree is estimated to be over 2,000 years old. When it was pruned in 1996, ten tons of deadwood was removed. Locals call the tree *El Gigante* (the Giant). In Mexico this species is known as the *ahuehuete*, which in the Nahuatl language means "old one of the water," as it generally grows by water or in swampy places.



WHERE DID LIFE COME FROM?

The Bible credits God with the design and creation of the awesome variety of plants and animals on earth. But can we trust the Bible record? Does it hold up under the scrutiny of modern science?

“The Lord God said, ‘Behold, I will make you a man like me, and I will give you dominion over all the earth and all the beasts of the field. And I will give you every tree that is in the garden of Eden for your food.’” (Gen. 1:28)